

Dusk Emergence Bat Survey

Thames Young Mariners, Riverside Dr, London

A Report To: Pick Everard
 Report Number: RT-MME-160594-04
 Date: July 2023



Quality Assurance

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of Practice for Planning and Development”. The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

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Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.

Non-Technical Summary

Project Background

In June 2023, Pick Everard commissioned Middlemarch Environmental Ltd to undertake a dusk emergence bat survey at Thames Young Mariners, Richmond, London. This assessment is required to inform a planning application associated with the redevelopment of the existing site to create new accommodation and educational facilities.

Scope of Survey

The Preliminary Bat Roost Assessment (RT-MME-160594-02) concluded that all five buildings on the site (B1-B5) had low potential to support roosting bats due to the presence of features including gaps in the brickwork, gaps in soffits, gaps at the eaves, gaps in wooden cladding, and lifted roofing felt. Building B2 was fully inspected during the Preliminary Bat Roost assessment and no roosts were discovered, therefore no further survey work was required for this building.

Following this, a dusk emergence bat survey was undertaken on 12th July 2023.

Summary of Key Bat Features

The dusk emergence bat survey identified no bats emerging from the buildings on site and it is therefore unlikely that there are any roosting bats within these buildings. A small amount of bat foraging and commuting activity was recorded on site, predominantly over the gardens, while further activity was recorded by the lake and around an area of grassland and scrub northeast of the building complex.

Potential Impacts on Bats

As no bats were observed emerging from the buildings to be demolished, it is concluded that there will be no direct harm or disturbance to roosting bats during the proposed works. Further, the suitable foraging habitat on site for bats, including the woodland, scrub and hedgerows will be retained, while the proposed works provide the opportunity to enhance the habitat value of the site.

Recommendations

- R1 Buildings B1, B2, B3, B4, and B5:** Buildings B1, B3, B4, and B5 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)¹, and no bat roosts were identified. Furthermore, building B2 was subject to a full inspection during the Preliminary Bat Roost Assessment, in which no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed buildings have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the buildings in the interim. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.
- R2 Scheme Design:** The proposed development should be designed to minimise effects on bats in accordance with the ecological mitigation hierarchy as set out in the National Planning Policy Framework (NPPF), and the National Planning Practice Guidance (NPPG).
- R3 Lighting:** In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018¹; Gunnell et al, 2012²), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

¹ Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals

² Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.

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1. Introduction

1.1 Project Background

In June 2023, Pick Everard commissioned Middlemarch to undertake a dusk emergence bat survey at Thames Young Mariners, Riverside Drive, Richmond, London. This survey is required to inform a planning application associated with the demolition of the existing structures on site to facilitate the construction of new accommodation buildings and facilities.

Middlemarch has previously carried out the following surveys and assessments for Pick Everard at this site, the findings of which are detailed in the following reports:

- Preliminary Arboricultural Appraisal (RT-MME-157100-01);
- Arboricultural Impact Assessment (RT-MME-157100-02);
- Ecological Walkover Survey (RT-MME-157100-03);
- Preliminary Bat Roost Assessment (RT-MME-157100-04);
- Badger Survey (RT-MME-157100-05);
- Biodiversity Net Gain Assessment (RT-MME-157100-06); and,
- Dusk Emergence Bat Survey (RT-MME-158089).

In addition, Middlemarch has been commissioned to undertake the following ecological survey work at the site:

- Ecological Walkover Survey (RT-MME-160594-01);
- Preliminary Bat Roost Assessment (RT-MME-160594-02); and,
- Badger Survey (RT-MME-160594-03).

As works are not due to commence within 12 months of the previous Preliminary Bat Roost Assessment and Bat Emergence Survey, updated surveys were recommended to ensure the status of the buildings had not changed.

The Preliminary Bat Roost Assessment in June 2023 (RT-MME-160594-02) identified buildings B1 (Main Building), B2 (Wooden Cabin), B3 (Canoe Shed), B4 (Cedar House), and B5 (Residential House) as having low potential to support roosting bats. This was concluded due to the presence of potential roosting features including gaps in the brickwork, gaps at the eaves, gaps in soffits, gaps in wooden cladding, loose fitting joints, pipe holes, and lifted roofing felt.

Bat Surveys: Good Practice Guidelines, published by the Bat Conservation Trust (Collins, 2016), recommends that structures with low roosting potential are subject to at least one survey (consisting of either a dusk emergence or dawn re-entry survey) during the peak season (May to August inclusive) to determine the presence/absence of roosting bats within them.

Therefore, a dusk emergence survey was recommended. All potential roost features within Building B2 could be fully inspected during the Preliminary Bat Roost Assessment and no bat roosts were identified, hence it was concluded that no further survey work is currently required for this building. This report details the results of the dusk emergence survey undertaken on 12th July 2023.

All UK bat species are legally protected species, and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1.

1.2 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Location	The site forms the southern section of the wider Thames Young Mariners, Riverside Drive, Richmond, TW10 7RX.
National Grid Reference	TQ 1642 7236
Site Area (ha)	3.8
Topography	Predominantly flat, with steep banks in the north of the site sloping down towards the lake.
Land Cover (on site)	The current development site forms the southern section of the wider Thames Young Mariners site. The site was used extensively for amenity purposes and was dominated by amenity grassland, while also including the southern reaches of the large lake, fringed by a series of docks and pontoons, along with extensive semi-natural habitats including trees, scrub, and woodland, which were also prevalent along the site boundaries. The site also included a complex of buildings towards the west, along with associated storage units and hardstanding, while the wider ownership boundary, to the north, included the remainder of the lake, with bordering woodland and scrub.
Land Cover (site surrounds)	The surrounding area comprises residential areas to the east and west (beyond the Thames), with Ham Lands Local Nature Reserve (comprising woodland, scrub, grassland, and wetlands) encompassing most of the site and extending to the north and south. The wider area is predominantly urban with areas of amenity grassland to the northeast and golf courses to the east and west. The site is located in the London Borough of Richmond.

Table 1.1: Summary of Site and Surroundings

1.3 Documentation Provided

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.2.

Document / Drawing Number	Author
Landscape Masterplan PR-200-PEV-XX-XX-DR-L-00200	Pick Everard

Table 1.2: Documentation Provided by Client

2. Methods

2.1 Desk Study

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site.

2.2 Field Survey

Overview

The buildings were classed as having low potential to support roosting bats. In line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)¹, a dusk emergence survey was carried out.

The survey was undertaken by the following personnel:

- Jacob Kench (Senior Ecological Consultant);
- Richard Sainsbury (Senior Ecological Consultant);
- Nick Davey (Ecological Consultant);
- Asija Zeidaks (Ecological Consultant);
- James Sharma (Ecological Consultant);
- Annabel Field (Ecological Project Officer); and,
- Benjamin Huxley (Ecological Field Officer).

The weather conditions were recorded on the survey and are presented in Table 2.1.

Type of Survey	Date	Time	Parameter			
			Temperature °C	Cloud %	Precipitation	Wind (Beaufort Scale)
Dusk	12-07-23	Start	18	10	Nil	2
		End	17	0	Nil	2

Table 2.1: Weather Conditions During Field Surveys

Dusk Emergence Bat Survey

In line with the specifications detailed in Bat Surveys: Good Practice Guidelines (Collins, 2016)¹, the dusk survey commenced 20 minutes prior to sunset and continued until 90-120 minutes after sunset.

Equipment and Analysis

The dusk emergence survey was conducted using electronic bat detectors (Echometer Touch 2) and a night vision aid (Cannon XA 40 with associated infrared illuminators) to facilitate the detection of bats and to aid in the determination of species of bat using the site. Subsequent computer analysis of sound recordings was used to facilitate the identification of bat species/families present during the surveys. Some species of bats echolocate at similar frequencies and the characteristics of their calls can overlap, i.e. *Myotis* species, and calls can vary dependant on the environment that the bats are in. It is widely accepted that if there is any doubt identifying a bat to species level then identification to family level is satisfactory (Russ,

1999)³. If echolocation calls more closely resemble one species than another, then they will be assigned to species level based on the parameters set out in Russ (2012)⁴ for guidance. Identification of overlapping species should, however, be interpreted with caution.

2.3 Constraints

Some of the buildings possessed security lights which were active at different times throughout the survey. Given the sensitive nature of bats to light, it is possible that these features may have deterred bats from using the surrounding areas. Nonetheless, given the permanent nature of the security lighting and the high levels of footfall on site, the results are considered to provide an accurate reflection of bat activity within the site.

³ Russ, J. (1999). *The Bats of Britain and Ireland. Echolocation calls, sound analysis, and species identification (1st Ed.)*. Alana Ecology Ltd, London.

⁴ Russ, J. (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.

3. Desk Study

3.1 Statutory Nature Conservation Sites

The site is not located within 10 km of any statutory nature conservation sites designated for the presence of bats.

3.2 Previous Bat Surveys

Middlemarch previously carried out a Preliminary Bat Roost Assessment of the buildings and trees on site in March 2022 (RT-MME-157100-04). During this survey, all five buildings (B1-B5) were considered to be of low bat roosting potential, due to the presence of features such as gaps in the brickwork, soffits, and eaves, loose fitting joints, lifted roofing felt, and pipe holes. Additionally, 13 trees were considered to have high roosting potential, while another 6 were identified as having moderate roosting potential, however these are all located outside of the proposed development footprint and will therefore be retained.

A subsequent dusk emergence bat survey was undertaken on the site in August 2022 (RT-MME-158089). During this survey, no bats were recorded emerging from or re-entering the buildings. Nevertheless, five species of bat were observed foraging and commuting on site, comprising noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Leisler's bat *Nyctalus leisleri*, and serotine *Eptesicus serotinus*. Foraging was most prominent in the peripheries of the survey area, including over the lake and grassland.

4. Survey Results

4.1 Dusk Emergence Survey

The dusk emergence survey commenced 15 minutes prior to sunset and continued until 90 minutes after sunset. Sunset was at 21:14 hrs (BBC Weather Centre Data for Richmond). Bat species recorded during the survey included soprano pipistrelle, Leisler's bat, common pipistrelle, and Daubenton's bat *Myotis daubentonii*. The survey results are plotted on Drawing C160594-04-01 in Chapter 7.

Soprano Pipistrelle

The first soprano pipistrelle was detected at 21:59 (45 minutes after sunset) as it foraged over the gardens of B1 and B5 for approximately 5 minutes, before exiting southeast over the adjacent road.

At 22:15 (1 hour 1 minute after sunset), a soprano pipistrelle was detected towards the northeast of the building complex, however no visual observation was made. Further soprano pipistrelle activity was detected but not seen by surveyors in the same location at 22:19 (1 hour 5 minutes after sunset) for approximately 3 minutes, likely foraging over the nearby areas of grassland and dense scrub. An additional pass was detected in this location at 22:27 (1 hour 13 minutes after sunset).

At 22:20 (1 hour 6 minutes after sunset), a soprano pipistrelle was observed commuting from east to west over the garden of B5, exiting over the southeastern corner of B1. This behaviour was observed again at 22:23 (1 hour 9 minutes after sunset).

At 22:28 (1 hour 14 minutes after sunset), a soprano pipistrelle pass was heard but not seen by the lake to the north of the site, presumably passing along the feature. At the same time, a soprano pipistrelle pass was detected by the garden of B5.

No soprano pipistrelles were observed emerging from any of the buildings on site.

Leisler's Bat

At 22:13 (59 minutes after sunset), a Leisler's bat pass was heard but not seen towards the southeast of the building complex.

No Leisler's bats were observed emerging from any of the buildings on site.

Common Pipistrelle

At 22:25 (1 hour 11 minutes after sunset), a common pipistrelle pass was detected towards the southeast of the building complex, however it was not seen.

No common pipistrelles were observed emerging from any of the buildings on site.

Daubenton's Bat

At 22:32 (1 hour 18 minutes after sunset), a Daubenton's bat was heard but not seen towards the north of the site, presumably passing along the waterbody to the north.

No Daubenton's bats were observed emerging from any of the buildings on site.

Other Bat Activity

Further recorded bat activity included an unidentified pipistrelle species *Pipistrellus* sp. at 22:02 (48 minutes after sunset) to the south of building B4. This call appeared to be quite distant, and it is possible that this was the soprano pipistrelle that was observed foraging over the gardens of B1 and B5 during a similar time period.

A possible Leisler's bat or noctule was heard but not seen at 22:15 (1 hour 1 minute after sunset) towards the west of the building complex. The call was brief and therefore difficult to identify to the species level.

No other species of bat were detected or observed during this survey. Analysis of the sound recordings did not identify any further species of bat.

Overall, no bats were seen emerging from any of the buildings on site.

5. Impact Assessment

5.1 Summary of Proposals

The proposed works entail the demolition of the existing buildings and facilities on the site to construct new accommodation and learning facilities. The majority of the works are to take place within the footprint of the existing buildings, however, small areas of amenity grassland, introduced shrub and poor semi-improved grassland will be lost to facilitate the wider development. It is understood that the proposals have been designed to retain all trees with bat roosting potential and the notable habitats on site, while additional habitat creation is proposed as compensation for the small-scale habitat losses.

5.2 Summary of Key Bat Features

Roosting Bats

No bats were seen emerging from the buildings on site; therefore, they are not believed to currently support any bat roosts.

Commuting/Foraging Bats

The buildings and associated areas of hardstanding offer limited foraging and commuting habitat for bats. However, to some extent, the associated gardens provide a foraging source in this area in the form of shrubs and amenity grassland, as demonstrated by the soprano pipistrelle observed foraging over the gardens of B1 and B5.

Elsewhere on site are a number of habitats which provide higher quality roosting and foraging habitat, including scattered trees, scrub, woodland and hedgerows. Soprano pipistrelle calls were recorded by an area of scrub and grassland to the northeast of the building complex and it is likely that these habitats, along with the habitats within the wider site, provide good quality foraging and commuting habitat for bats.

A soprano pipistrelle and Daubenton's bat were detected by the lake towards the north of the site and it is likely that this waterbody and associated habitats provide high-quality foraging habitat for bats, with both of these species having a preference for foraging over or near water.

The site is well connected to the wider landscape, which provides a broad network of habitats and a range of roosting, foraging, and commuting opportunities.

5.3 Potential Impacts on Bats

No bats were observed emerging from any of the buildings during the dusk survey, while a small amount of bat activity was observed surrounding the building complex. Based on the results of the survey, it is concluded that there are currently no bat roosts present in the buildings on site. Therefore, the proposed works are not expected to directly harm or disturb any roosting bats.

The proposals have been designed to retain and protect the habitats of value on site, namely the lake, scattered trees, hedgerows, scrub, and woodland. Therefore, subject to the recommendations set out below, the proposals are unlikely to negatively impact bats and represent the opportunity to enhance the value of the site for bats.

Full recommendations are made in Chapter 6.

6. Recommendations

All recommendations provided in this section are based on Middlemarch's current understanding of the site proposals provided by Pick Everard, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Buildings B1, B2, B3, B4, and B5: Buildings B1, B3, B4, and B5 have been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)¹, and no bat roosts were identified. Furthermore, building B2 was subject to a full inspection during the Preliminary Bat Roost Assessment, in which no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the buildings in the interim. Updated Preliminary Bat Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal or dawn assessment will need to adhere to the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)¹ with the surveys undertaken between April and September inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Scheme Design: The proposed development should be designed to minimise effects on bats in accordance with the ecological mitigation hierarchy as set out in the National Planning Policy Framework (NPPF), and the National Planning Practice Guidance (NPPG). The mitigation hierarchy requires all development schemes to apply the following principles:

- *Avoidance and Mitigation* – the proposed development should seek to avoid/minimise losses of features with bat potential, in the first instance and incorporate these features in the landscaping layout of the scheme accordingly. Similarly, protection measures for retained features and surrounding habitats should be considered to prevent incidental damage or disturbance during the construction phases. These measures will help to reduce the likelihood of impacting bats and minimise losses of suitable bat roosts and habitat. Where significant harm cannot be wholly or partially avoided, adverse impacts should be minimised by design or through the use of effective mitigation measures such as minimising light spill (see below).
- *Compensation* – where unavoidable losses occur and mitigation cannot be provided, compensation for significant residual harm will be required as a last resort or planning permission could be refused. Where there is a significant effect on a bat roost, a compensation strategy sufficient to obtain a development licence from Natural England may also be required.

R3 Lighting: In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018⁵; Gunnell et al, 2012⁶), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

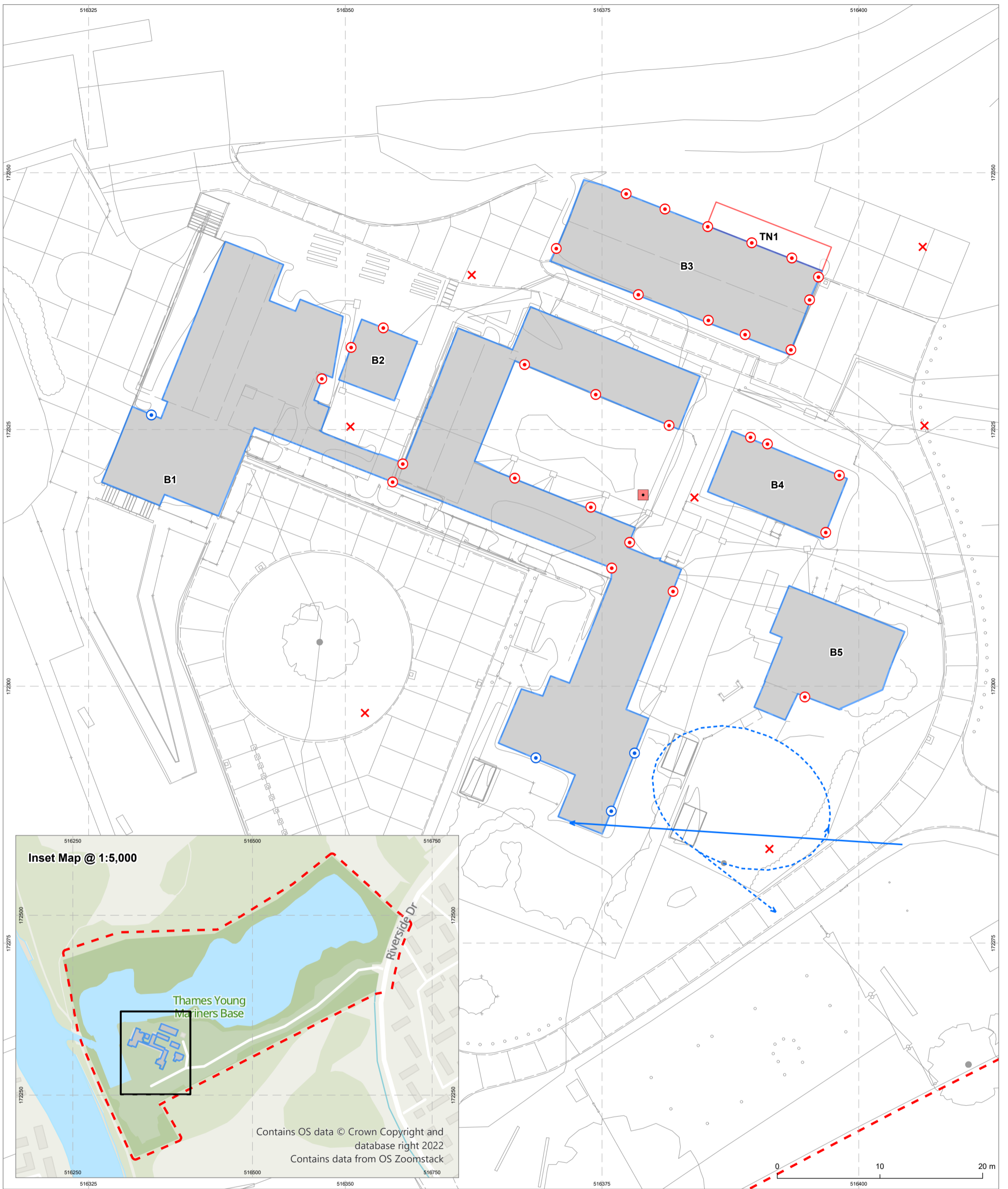
⁵ Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals

⁶ Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.

- Avoiding the installation of new lighting in proximity to key ecological features, such as the lake, woodland, scrub, hedgerows and scattered trees.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g. the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.
- For internal lights, recessed light fittings cause significantly less glare than pendant type fittings. The use of low-glare glass may also be appropriate where internal lighting has the potential to influence sensitive ecological receptors.

7. Drawings

Drawing C160594-04-01 – Dusk Emergence Survey



- Legend**
- - Site boundary
 - X Surveyor location
 - Camera location
 - ⊙ Potential roosting feature
 - ⊙ Potential roosting feature, fully inspected with no evidence of roosting bats recorded
 - Building with low bat roost potential
 - ▭ TN1 - Metal container; likely restricting bat access to northern elevation
- Bat activity:**
- Soprano pipistrelle commuting
 - -> Soprano pipistrelle foraging

Project		Thames Young Mariners, Riverside Dr, London	
Drawing		Dusk Emergence Survey (12/07/2023)	
Client		Pick Everard	
Drawing Number	C160594-04-01	Revision	00
Scale @ A3	1:350	Date	July 2023
Approved By	JS	Drawn By	BD



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Appendix 1

Relevant Legislation

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CRoW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.