

Dusk Emergence & Dawn Re-entry Bat Surveys

Charville Lane Children's Home, 113 Charville Lane, Hayes, London Borough of Hillingdon

A Report To: Hunters Architects
Report Number: RT-MME-161373
Date: September 2023



Quality Assurance

Date	Version	Author	Checked by	Approved by
11/09/2023	Final	Nick Davey MSc (Ecological Consultant)	Paul Roebuck MSc MCIEEM (Regional Manager: South)	Paul Roebuck MSc MCIEEM (Regional Manager: South)

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 August 2023 Hunters Architects commissioned Middlemarch to undertake dusk emergence and dawn re-entry bat surveys at Charville Lane Children's Home, 113 Charville Lane, Hayes, London Borough of Hillingdon. These surveys are required to inform a planning application associated with the demolition of the Children's Home building and the construction of six houses and an education building.

Scope of Survey

The Preliminary Bat Roost Assessment (RT-MME-161166-02) concluded that the Children's Home building (Building 1) had moderate potential to support roosting bats due to the presence of weepholes, occasional gaps in the barge boards, gaps underneath tiles at the eaves (which appeared to provide access into roof void RV2a) and vents on the ridge tiles. In addition, a single wooden shed is present on site which was assessed to have negligible potential to support roosting bats due to the absence of potential roosting opportunities and therefore no further survey work was required for this building.

Following the Preliminary Bat Roost Assessment, further survey work was undertaken of Building 1 in the form of a dusk emergence survey undertaken on 17th August 2023 and a dawn re-entry survey undertaken on 6th September 2023.

Summary of Key Bat Features

The dusk emergence and dawn re-entry surveys identified no bats emerging from Building 1 and it is therefore unlikely that there are any roosting bats within the building. A small amount of bat commuting activity was recorded over the site.

Potential Impacts on Bats

As no bats were observed emerging from or re-entering the building to be demolished, it is concluded that there will be no direct harm or disturbance to roosting bats during the proposed works.

The proposals will retain the vast majority of the suitable foraging and commuting habitat on site for bats, including all scattered trees and much of the existing hedgerow length, while extensive new tree, shrub and hedgerow planting will enhance the value of the site for foraging and commuting bats.

Recommendations

- R1** **Building 1** has 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. 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 building 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 August 2023 Hunters Architects commissioned Middlemarch to undertake dusk emergence and dawn re-entry bat surveys at Charville Lane Children's Home, 113 Charville Lane, Hayes, London Borough of Hillingdon. These surveys are required to inform a planning application associated with the demolition of the Children's Home building and the construction of six houses and an education building.

Middlemarch previously carried out a Preliminary Ecological Appraisal and a Preliminary Bat Roost Assessment at the site in July 2023 (report numbers RT-MME-161166-01 and RT-MME-161166-02 respectively).

The Preliminary Bat Roost Assessment (RT-MME-161166-02) concluded that the Children's Home building (Building 1) had moderate potential to support roosting bats due to the presence of weepholes, occasional gaps in the barge boards, gaps underneath tiles at the eaves (which appeared to provide access into roof void RV2a), and vents on the ridge tiles. Bat Surveys: Good Practice Guidelines, published by the Bat Conservation Trust (Collins, 2016), recommends that structures with moderate roosting potential are subject to at least two surveys (consisting of one dusk emergence and a separate dawn re-entry survey) during the bat emergence/re-entry survey season (May-September), with at least one of these surveys undertaken during the peak season (May-August). Such surveys are necessary to determine the presence/absence of roosting bats within the building. This report details the results of the dusk emergence survey and dawn re-entry survey undertaken on 17th August and 6th September 2023 respectively.

The Preliminary Bat Roost Assessment identified the presence of a single shed to the north of Building 1 which supported negligible bat roosting potential due to the absence of potential roosting opportunities. Therefore, no further survey work was recommended for this building. A number of trees supporting bat roosting potential were also identified, albeit these are proposed for retention and therefore no further survey work in relation to bats was recommended for these trees.

All UK bat species are legally protected species and 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	Charville Lane Children's Home, 113 Charville Lane, Hayes, London Borough of Hillingdon
National Grid Reference	TQ 08904 83198
Site Area (ha)	0.31
Topography	Flat
Land Cover (on site)	The site is dominated by the Children's Home building (Building 1), hardstanding, and amenity grassland. There are also areas of introduced shrub, a defunct hedgerow, and scattered trees.
Land Cover (site surrounds)	The wider landscape is dominated by urban development, as well as parks, sports grounds, agricultural land, and woodland. The A40 road is located 1.3 km north, with RAF Northolt located just beyond it.

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
APL002 Topographic Plan	Hunters
APL003 Existing Plans and Elevations	Hunters
APL004 Site Plan	Hunters
APL006 Ground Floor Plan	Hunters
APL007 First Floor Plan	Hunters
APL008 Roof Plan	Hunters

Table 1.2: Documentation Provided by Client

2. Methods

2.1 Desk Study

As part of the Preliminary Ecological Appraisal (Report RT-MME-161166) an ecological desk study was undertaken. The consultees for the desk study were:

- Natural England - MAGIC website for statutory conservation sites; and,
- Greenspace Information for Greater London (GiGL) CIC.

Middlemarch then assimilated and reviewed the desk study data provided by these organisations. Relevant bat data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

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

Building 1 was classed as having moderate potential to support roosting bats. In line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)¹, two separate bat surveys were carried out consisting of one dusk emergence bat survey and one dawn re-entry bat survey. The aim of these surveys was to detect whether bats are roosting within the building, and to enable a profile of site utilisation by bats to be compiled.

The surveys were undertaken by the following personnel:

17th August 2023 (Dusk)

- Nick Davey (Ecological Consultant);
- Asija Zeidaks (Ecological Consultant);
- James Sharma (Ecological Consultant); and,
- Matt Fletcher (Ecological Field Officer).

6th September 2023 (Dawn)

- Jacob Kench (Senior Ecological Consultant);
- Asija Zeidaks (Ecological Consultant);
- James Sharma (Ecological Consultant); and,
- Arthur Jones (Ecological Project Officer).

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

Type of Survey	Date	Time	Parameter			
			Temperature °C	Cloud %	Precipitation	Wind (Beaufort Scale)
Dusk	17-08-23	Start	20	50	Dry	3
		End	19	50	Dry	3
Dawn	06-09-23	Start	16	0	Dry	1
		End	15	0	Dry	1

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)**Error! Bookmark not defined.**, the dusk survey commenced 15 minutes prior to sunset and continued until 90-120 minutes after sunset.

Dawn Re-Entry Bat Survey

Bats swarm at their roost site 10-90 minutes prior to entering the roost at dawn (Mitchell-Jones & McLeish, 2004)³. Surveying for dawn swarming by bats is an efficient way of detecting bat roosts. In line with the specifications detailed by Bat Surveys: Good Practice Guidelines (Collins, 2016)**Error! Bookmark not defined.**, the dawn survey commenced 90-120 minutes prior to sunrise and continued until 15 minutes after sunrise.

Equipment and Analysis

The dusk emergence survey and dawn re-entry survey were conducted using electronic bat detectors (Echometer Touch 2) 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)⁴. 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)⁵ for guidance. Identification of overlapping species should, however, be interpreted with caution.

2.3 Constraints

No constraints were encountered during either of the surveys undertaken.

³ Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers' Manual* (3rd Ed.). JNCC, Peterborough.

⁴ Russ, J. (1999). *The Bats of Britain and Ireland. Echolocation calls, sound analysis, and species identification* (1st Ed.). Alana Ecology Ltd, London.

⁵ 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 Species Records

The data search was carried out on 22nd July 2023 by GiGL CIC. Records of bat species within a 1 km radius of the survey area provided by the consultee are summarised in Table 3.1. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area	Species of Principal Importance?	Legislation / Conservation Status
Pipistrelle <i>Pipistrellus</i> sp.	1	2014	995 m north-west	#	ECH 4, WCA 5, WCA 6

Key:
#: Dependent on species.

ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection.

WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds).

WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods.

Table 3.1: Bat Species Records Within 1 km of Survey Area

4. Survey Results

4.1 Dusk Emergence Survey

The first dusk emergence survey commenced 15 minutes prior to sunset and continued until 90 minutes after sunset. Sunset was at 20:21 hrs (BBC Weather Centre Data for Hayes). Surveyor locations are plotted on Drawing C161373-01 in Chapter 7.

One species of bat was recorded during the survey: noctule *Nyctalus noctula*. The first noctule was recorded, but not seen, commuting over the site at 21:21 (with this pass detected by several surveyors surrounding the building). Additional commuting passes by noctule were recorded, but not seen, to the north of the building at 21:27 and 21:29.

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.

4.2 Dawn Re-entry Survey

The dawn re-entry survey commenced 90 minutes prior to sunrise and continued until 15 minutes after sunrise. Sunrise was at 06:21 hrs (BBC Weather Centre Data for Hayes). Surveyor locations are plotted on Drawing C161373-01 in Chapter 7. Two species of bat, soprano pipistrelle *Pipistrellus pygmaeus* and noctule, were recorded during the survey.

Soprano Pipistrelle

The first soprano pipistrelle was detected at 05:07 as it passed over the south of the site, however this bat was not visually observed. A further unseen commuting noctule was recorded at 05:12 to the southwest of the building.

Noctule

The first noctule was recorded at 05:35 commuting over the north of the site, however this bat was not seen. A further noctule pass was heard but not seen towards the south of the building at 05:37.

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

5. Impact Assessment

5.1 Summary of Proposals

The proposed works entail the demolition of the Children's Home building and the construction of six houses and an education building. The vast majority of habitats suitable for foraging and commuting bats will be retained, including all scattered trees and much of the hedgerow length. In addition, habitat creation, including shrubs, trees and hedgerows will be undertaken to compensate for any small-scale losses of suitable bat foraging and commuting habitat.

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 site is reasonably well connected to areas of suitable habitat given the presence of farmland and associated hedgerows immediately south of the site, and the presence of a woodland pocket approximately 30m northeast of the site. However, the site itself provides limited foraging habitat for bats in the form of scattered trees and hedgerows, while the site is subject to extensive lighting (Drawing C161373-01 includes a plan of the lighting on site recorded during the bat surveys). These factors, along with the extensive well-lit residential landscape surrounding much of the site, are likely to explain the limited level of bat activity recorded during the surveys. Overall, the site is considered to be of low value to foraging and commuting bats.

5.3 Potential Impacts on Bats

No bats were observed emerging from or re-entering the building during the dusk emergence survey or dawn re-entry survey, while a small amount of bat activity was observed on site. Based on the results of the survey, it is concluded that there are currently no bat roosts present in the building and therefore the proposed works are not expected to directly harm or disturb any roosting bats.

The surveys recorded only limited bat activity on site, while the proposals have been designed to retain and protect the habitats of value on site, namely the scattered trees and hedgerow. Therefore, subject to the proposed habitat enhancement measures along with 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, 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 **Building 1:** Building 1 has been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)**Error! Bookmark not defined.**, and 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 building 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)**Error! Bookmark not defined.** with the surveys undertaken between May 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, 2018⁶; Gunnell et al, 2012⁷), 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:

⁶ 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

⁷ 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 scattered trees and hedgerows.
- 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 C161373-01 – Dusk Emergence and Dawn Re-entry Surveys



Legend	
	Survey area
	Surveyor location
	External light
	Building with moderate bat roosting potential

Note: No bat activity was detected on the survey.

Project Charville Lane Children's Home, 113 Charville Lane, Hayes, London Borough of Hillingdon

Drawing Dusk Emergence and Dawn Re-entry Survey

Client Hunt Architects

Drawing Number C161373-01 Revision 00

Scale @ A3 1:400 Date August 2023

Approved By ND Drawn By BD

C161373-01



MIDDLEMARCH

Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

T: 01676 525880

E: admin@middlemarch-environmental.com

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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.