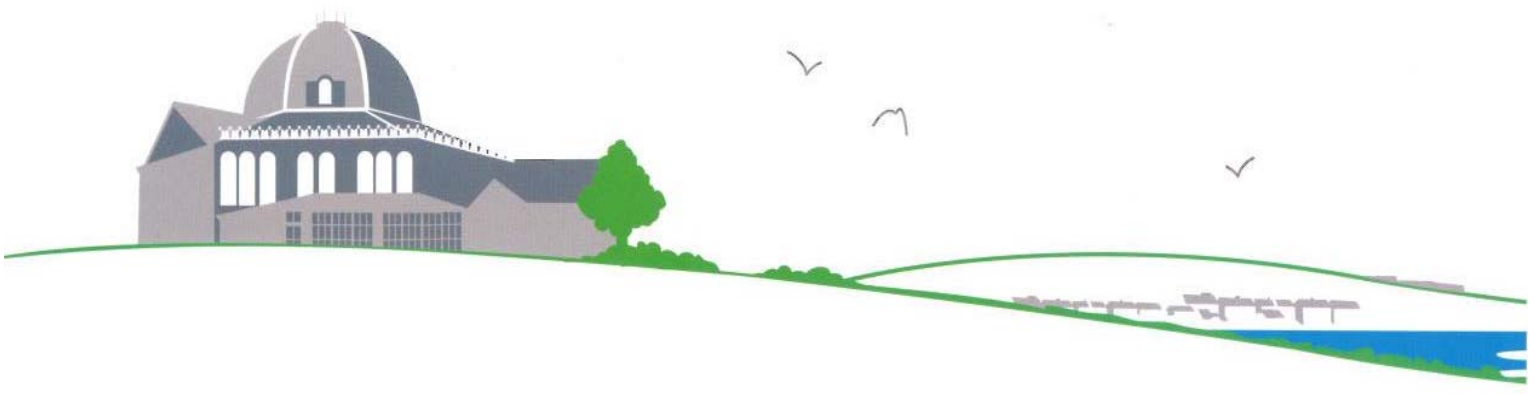
Penny Anderson Associates Ltd
CONSULTANT ECOLOGISTS

MONTRIAL LTD

BEECH MOUNT DISTRICT NURSES HOME, HARPURHEY, MANCHESTER

BAT SURVEY REPORT



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BAT SURVEY REPORT

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This project has been undertaken in accordance with PAA policies and procedures on quality assurance.



Signed:_____

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1. INTRODUCTION

Background

1.1 Penny Anderson Associates Ltd (PAA) was commissioned by Montrial Ltd to carry out surveys to investigate presence/likely absence of roosting bats at a site off Beech Mount, Harpurhey, Manchester. This was formerly Harpurhey District Nurses Home, hereafter referred to as 'the site' (central grid reference: 85687 01599). The site is proposed for residential development, which will involve refurbishment works of existing structures.

1.2 NLG Ecology Ltd was initially commissioned to undertake an inspection of the site for bat roosting potential (NLG Ecology 2018). A number of bat roosting opportunities were identified across the building's exterior. Areas of roosting potential include missing bricks, most of which are located at the top of the wall plates just beneath the fascia and barge boards (evident on all of the building's elevations), behind the fascia boards themselves and beneath lifted roof tiles.

1.3 Internal loft inspections found that missing bricks provided bats with direct access into the loft space. Within the cellars the cool, dark and damp conditions were also considered to provide an optimal environment for hibernating bats.

1.4 The building was assessed as having moderate bat roosting potential and in keeping with best practice guidance, two emergence re-entry surveys were recommended to be carried out during the main active bat season, between May and August.

1.5 This report details the results of two emergence surveys undertaken to assess the site's status for bats.

Site Description

1.6 The site fronts onto Beech Mount and the north-west elevation on Palladium Drive (Appendix 1, Photos 1 and 2). Immediately at the rear and side, the neighbouring buildings consist of three-storey apartments with gardens and car parking areas. The site is located in a built up area of inner-city Manchester characterised by residential housing, gardens and commercial properties with limited areas of public greenspace.

1.7 The building has three floors and a cellar that extends the length of the building footprint. The windows have been boarded up, entrances installed with metal doors and the site perimeter secured with security fencing. It has been unoccupied for a number of years and at times has been subject to vandalism, vagrant occupation and arson. The surrounding garden is relatively small and has been cleared of trees with self-colonised shrubs and ruderal vegetation now dominating the vegetation.

Bat Biology

1.8 There are 17 species of native bats known to be resident (i.e. breed) in the British Isles. British bats feed entirely on insects and have developed a complex sonar system, known as echolocation, which enables them to find prey and navigate around their environment at night.

1.9 Habitat requirements vary widely, both on an individual and species level, although certain features, such as woodland, parkland, traditional pasture, marshes and areas of freshwater, are often focal points for foraging, as insects are plentiful in these areas (Mitchell-Jones 2004). Bats use linear features such as rivers, hedgerows, roads and woodland edges as landmarks in order to commute from one location to another (Schofield and Mitchell-Jones 2003).

1.10 Bats utilise different roosts at different times of the year. Between late October and March, bats hibernate; this requires an unexposed roost with a stable temperature, typically a cave, cellar or

tunnel. Around March, the bats emerge and gradually move to their summer roosts, typically within man-made structures or suitable crevices in trees. During the spring and summer period female bats gather together at maternity roosts to give birth and rear their young. Most births occur between late June and mid-July, with the young able to fly within three to five weeks (Altringham 2003; Waters and Warren 2003). By the end of August, most of the young bats are independent and the colony begins to break up (Schofield and Mitchell-Jones 2003). Mating takes place between August and December, either at the winter hibernation site or at autumn breeding sites. The numbers of bats utilising these roosts can vary from single bats to hundreds of bats in a nursery colony or hibernation site (Altringham 2003).

1.11 Bats play an important role in many environments around the world, including pollination and insect control. In the UK, bats can tell us a lot about the state of the environment because they are top predators of common nocturnal insects and are extremely sensitive to changes in their surroundings, e.g. climate, landscape, agricultural intensification, development and habitat fragmentation. Populations of British bats have suffered severe declines in the past century, influenced by these factors.

Legislative Context

1.12 All wild species of bat are protected under the Wildlife and Countryside Act (WCA) 1981, which has also been amended by later legislation, including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2017, and this legislation is applicable to England and Wales. Bats are listed on Schedule 5 of the WCA and are therefore subject to some the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

1.13 There are additional offences in relation to buying and selling (S9:5) any live or dead animal of this species or anything derived from them.

1.14 Bat species are also listed under Annexes IIa and IVa of the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2017.

1.15 The Conservation of Habitats and Species Regulations 2017 state that a person commits an offence if they:

(a) deliberately capture, injure or kill any wild animal of a European protected species,

(b) deliberately disturb wild animals of any such species, in such a way as –

(i) to impair their ability to survive, to breed or reproduce, or to rear their young, or

(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or

(iii) to affect significantly the local distribution or abundance of the species to which they belong;

(c) deliberately take or destroy the eggs of such an animal, or

(d) damage or destroy a breeding site or resting place of such an animal.

1.16 Under these Regulations it is an offence to damage or destroy a breeding site or resting place whether the animal is in occupation or not, and protection extends to all life stages of the animal in question. There are additional offences relating to possession, control and sale of a live or dead bat or part of such an animal.

1.17 In addition, seven native British bat species, including the soprano pipistrelle (*Pipistrellus pygmaeus*) and the brown long-eared bat (*Plecotus auritus*), that are frequently found in buildings, are listed as a 'Priority Species' under the under the 2011 biodiversity strategy for England, *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*, under the 2012 UK Post-2010 UK Biodiversity Framework. These Priority Species are also referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000, and Sections 41 (England) and 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act 2006.

1.18 Section 15 of the National Planning Policy Framework (NPPF 2019) states that the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible. The NPPF also includes the requirement to contribute to the Government's commitment to halt the overall decline in biodiversity and to promote the reservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets. Reference is made to Circular 06/2005 *Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System* in respect of statutory obligations for biodiversity and geodiversity conservation.

1.19 Local authorities in England are required to ensure that where significant harm resulting from development cannot be avoided (through locating on alternative sites with less harmful impacts), adequately mitigated or, as a last resort, compensated for, planning permission is refused. The commitment to preserving, restoring or enhancing biodiversity is further emphasised for England and Wales in Section 40 of the NERC Act 2006.

1.20 *Please note: the above text provides a brief summary of the legislation in relation to bats in England and Wales and the original Acts, Regulations and any amendments should be referred to for the precise wording.*

2. METHODS

Overview

2.1 A daytime building inspection was carried out on the 16th July led by Principal Ecologist Helen Hamilton1 MCIEEM[2]. Methods followed current good practice guidelines published by The Bat Conservation Trust (Collins 2016) so that the techniques, equipment and assessment criteria used were consistent with the currently accepted standards for bat surveys.

2.2 During the inspection, the exterior of the building was walked and examined for any signs of bats (such as staining or droppings on surfaces including walls and window ledges, feeding remains, as well as the bats themselves) for features suitable for roosting bats. Features of interest would include gaps around doorframes, beneath felt/lead flashing, at the wall plates and eaves of pitched roofs, and any crevices beneath fascia boards, barge boards, within soffits or created by missing mortar within the brickwork.

2.3 An internal inspection of the building was not possible on the grounds of health and safety. An asbestos survey had yet to be carried out and the upper floors were considered to be unsafe. Where access had been gained during the initial inspection by NLG Ecology Ltd note was taken of the assessments made for roost potential.

2.4 A number of Potential Roost Features (PRF) were recorded, including gaps between the facia and walls (Photos 3 and 4) and under tiles, that would be suitable for crevice-dwelling species such as common pipistrelle (*Pipistrellus pipistrellus*). Broken windows (Photo 5) and poorly fitting boarding would potentially provide access for bats. In addition, open entry was available to the cellar. It was concluded the building had a number of suitable PRF and it was assessed as having moderate bat roost potential,

2.5 The habitats within the site and immediately adjacent areas were also considered for their general suitability for commuting and foraging bats, to place the site in the context of its surroundings, as this can have a bearing on the likelihood of a roost being present.

Dusk Emergence Surveys

2.6 The survey programme was led by a licensed bat ecologist with surveys undertaken by a team of PAA ecologists, detailed in the table below. Each member of the survey team was appropriately qualified for their assigned tasks based on the CIEEM competency framework (CIEEM 2013).

[1] *Natural England class licence registration number CLS031902015-15840-CLS-CLS - L2*

[2] *Member of the Chartered Institute of Ecology and Environment Management*

Table 1 Survey Team

Name	Appropriate Qualification
Helen Hamilton (HH)	Principal Ecologist Licensed Bat Ecologist (Class 2)
Gerard Hawley (GJH)	Principal Environmental Scientist MCIEEM
Caroline Boffey (CBo)	Ecologist ACIEEM
Rob Lamb (RL)	Ecologist
Beth Howes (BH)	Assistant Ecologist
Phoebe Grey (PG)	Assistant Ecologist

2.7 The surveys used a team of four surveyors to observe all potential roost features that had been identified (see Figure 1). Each surveyor was equipped with a Batbox duet to aid detection of calls in the field and an Anabat SD1 to record calls for sonogram analysis and confirmation of species identification. Surveys commenced no later than 15 minutes prior to sunset and continued for approximately 1.5-2 hours.

2.8 Weather conditions were recorded at the start and end of each survey. Temperature and humidity were measured using a hygro-thermometer (810-190 www.etiltd.com). Wind strength was estimated using the Beaufort Wind Force Scale, ranging from 0 calm to 5 moderate breeze (NB while the scale extends to force 12 hurricane, 6 or higher would be unsuitable conditions for surveys). Cloud cover was estimated where 0% is a completely clear sky and 100% is completely overcast. The timings, dates and conditions for each survey are provided in the table below.

Table 2 Timings and Conditions of Surveys

Date	Survey Type	Team	Start Time	Sunset Time	End Time	Weather Conditions
16/07/18	Dusk Emergence	HH GJH CBo BH	21:05	21:29	22:45	Dry with light wind. Temperature 20°C, decreasing to 19.5°C by the end of survey. Relative humidity 43%, increasing to 49%. Cloud cover 20% increasing to 90%.
29/07/18	Dusk Emergence	RL CBo BH PG	20:50	21:11	22:20	Dry and calm. Temperature 15.6°C, decreasing to 12°C by the end of survey. Relative humidity 47%, increasing to 60%. Cloud cover 90% throughout.

Data Analysis

2.9 Recorded bat calls from each of the survey visits were analysed using specialist sound analysis software Analook W. Based on parameters such as peak frequency and call duration, each call was assigned to a particular bat species or species group.

Limitations to Survey Techniques

2.10 Bat detectors have a range of approximately 20m. Some bat species such as noctule (*Nyctalus noctula*) have very loud echolocation calls that can travel over long distances and therefore may be detected at greater range, whilst others such as brown long-eared bats typically have very quiet calls that are often only detected at close range.

2.11 Visual observation of bat activity is constrained by light levels. While surveyors may be able to see bats silhouetted against the sky, individuals flying against a background of dark buildings or trees are much more difficult to spot. The use of bat detectors to hear echolocation calls helps to ensure that activity is not missed. However, in low light conditions it is not always possible to ascertain details such as direction of flight.

2.12 Both survey visits were carried out within the optimum season on days when weather conditions were forecast to be suitable. The site was fully accessible during each of the survey visits. No significant limitations were encountered and therefore the results of the survey are considered to be robust.

3. RESULTS

Dusk Emergence Survey: 16/07/19

3.1 The first bat was recorded at 21:48 approximately 19 minutes after sunset, commuting across the rear of the building and north-west elevation off Palladium Drive (Photo 2). The majority of records were for bats commuting and foraging at this location (see Figure 1, Photos 6 and 7).

3.2 There was very little activity at the front and south-east elevation of the building (Photos 1 and 5). Activity levels were generally low and no bats were seen emerging from the building. Field observations were for common pipistrelle, which Analook analysis later confirmed to be the case.

Dusk Emergence Survey: 29/07/19

3.3 The earliest record of bat activity was at 21:19, eight minutes after sunset. The pattern of activity was very similar to that of the first survey with commuting and foraging largely confined to the north-west elevation and rear of the building with significantly less activity at the front and south-east side of the site.

3.4 No bats were seen emerging from the building. Field records were largely for common pipistrelle with a single registration of a soprano pipistrelle confirmed following Analook analysis.

4. EVALUATION AND RECOMMENDATIONS

4.1 Despite a number of building features that ostensibly could be used by roosting bats, no evidence of roosting was found. There are a number of trees, gardens and open greenspaces in the vicinity of the property and commuting and foraging was observed. However, the numbers recorded were relatively small and overall, the habitat suitability is poor and habitats on site were considered to be of low value to foraging and commuting bats.

4.2 In line with current good practice, if development has not begun within two years of this report then the value of the site for bats should be reassessed to ensure that the impact assessment and recommendations remain relevant to the proposals.

4.3 Surveys have followed current good practice standards for having confidence in a negative result and, therefore, the results are considered to be robust. As there is no evidence of use by roosting bats, a licence application to Natural England is not thought necessary. Should evidence of use by roosting bats be identified at a later stage then further advice should be sought on the need for a licence.

4.4 Detailed final designs for the development have yet to be finalised. However, the lighting design for the scheme should seek to minimise illumination. The following general points should be considered for the lighting specifications:

- Lighting columns should be as low as is reasonable for their intended purpose. Shorter columns typically have less ecological impact by directing light below where bats would be flying;
- Lamps should be hooded and directed to shine into the site to minimise unnecessary light spillage at the boundaries;
- The use of bollard-style lighting should be considered (where practical) to provide illumination where required, whilst also maintaining relative darkness above at the typical flight level of bats; and
- Use of timers and motion sensors should be considered to restrict illumination to periods when it is actually required.

4.5 Further guidance on lighting specifications is provided in publications available via the Bat Conservation Trust (BCT) website, such as the impacts of different types of lighting (RCEP 2009), effects of artificial lighting on bat behaviour (Stone 2013) and guidelines for mitigation (BCT 2014).

4.6 In terms of maximising the value of foraging habitat structure within the site post-development, consideration should be given to creating areas of species-rich grassland rather than just short mown amenity grassland. The increased plant diversity and taller habitat structure will support a greater abundance and diversity of the invertebrates upon which bats feed.

4.7 Incorporating trees and shrub planting will also help to provide sheltered areas and a taller habitat structure for bats to use for shelter and navigation whilst in flight, with native species providing the greatest overall biodiversity value.

4.8 Enhancement for bats could be achieved by the provision of new roosting opportunities, for example:

- Bat boxes attached to trees or to the exterior of new buildings;
- Raised ridge tile or modified roof tiles to provide external roof level roosting sites for crevice dwelling species;
- Bat bricks or eaves roost boxes incorporated within the structure of new buildings; and/or

- Provision of bat access to any unused roof voids or the creation of small cavities behind any features such as fascia boards, soffit boxes and hanging tiles.

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6. ABBREVIATIONS

BCT Bat Conservation Trust

CRoW Countryside Rights of Way

EPS European Protected Species

EU European Union

NERC Natural Environment and Rural Communities

NPPF National Planning Policy Framework

PAA Penny Anderson Associates Ltd

PRF Potential Roost Feature

WCA Wildlife and Countryside Act

FIGURE

385680 385700 385720

401620 401600 401580

Palladium Drive

Beech Mount



Legend

- Boundary
- Location of surveyors
- Area of maximum bat activity

British National Grid
Projection: Transverse Mercator
False Easting: 400000.000000
False Northing: -100000.000000
Central Meridian: -2.000000
Scale Factor: 0.999601
Latitude Of Origin: 49.000000

N

ISO A3

0 1 2 4 6 Metres

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Project Name: Beech Mount Harpurhey

Discipline: Ecology

Title: Building Plan

Scale	Drawing No.
1:175	Figure 1

Drawn By	Originator	Date
MDM	HH	06/08/2019

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Revision 1.0

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APPENDIX 1

Photographs



Photo 1 Front of property on Beech Mount, south-west elevation



Photo 2 North-west elevation from Palladium Drive



Photo 3 Note gaps between facia and wall



Photo 4 Close up of facia on south-east elevation



Photo 5 Broken windows on south-east elevation

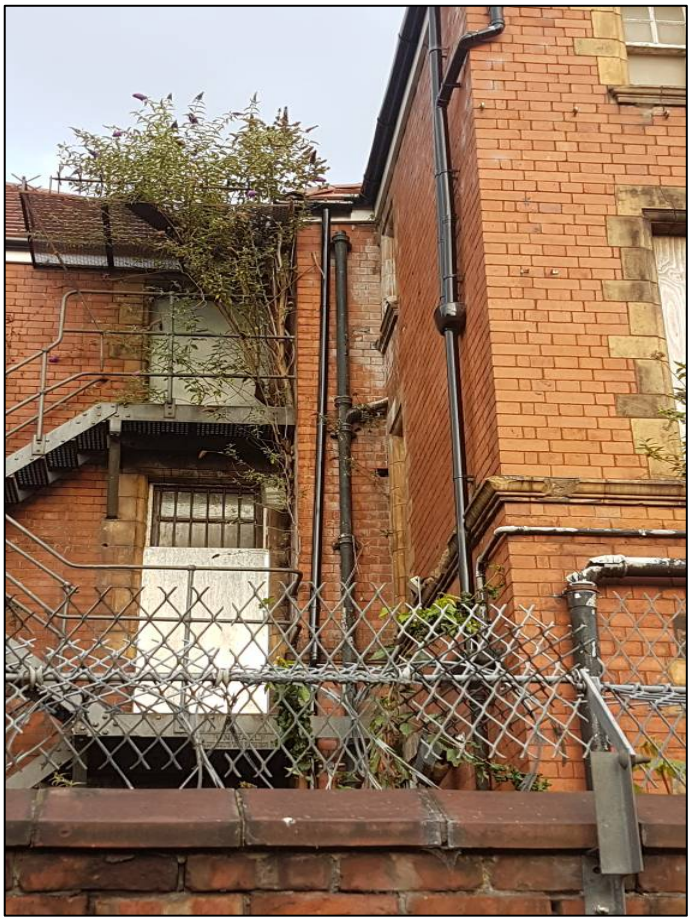


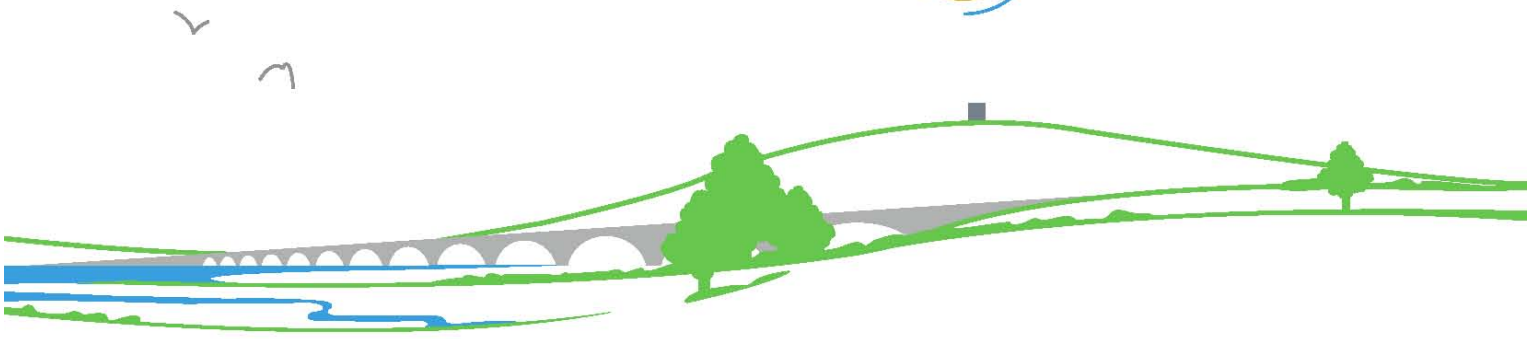
Photo 6 Rear of property, north-east elevation



Photo 7 Rear of property where bat activity was at its greatest during both surveys

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