



Heathrow 1

11 OCT 2017

Manor Court, Harmondsworth

Bat Surveys Report

Project No. 856431

AUGUST 2017

RSK



RSK GENERAL NOTES

Project No.: 856431-01

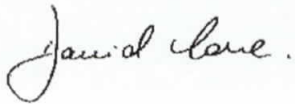
Title: Manor Court, Harmondsworth – Bat Surveys Report

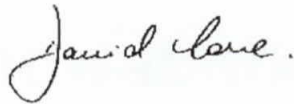
Client: Heathrow 1

Date: August 2017

Office: Hemel Hempstead

Status: Final

Author	David Cove Principal Consultant	Technical reviewer	Roberta Epps
Signature		Signature	
Date:	04/08/17	Date:	07/08/17

Project Manager	David Cove Principal Consultant
Signature	
Date:	04/08/17

RSK Environment Ltd (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

EXECUTIVE SUMMARY

1. This report presents the results of an Initial Building Assessment and emergence surveys for bats in connection with proposals to convert two existing buildings from offices to residential use at Manor Court, Harmondsworth, West Drayton, Middlesex,
2. The report is based on information collected during an initial field survey completed on 22 February 2016 and emergence surveys during June and July 2017.
3. The site consists of four buildings, the former stable block now converted to office space, the Office Barn, Manor Lodge a former farm house now a House of Multiple Occupation (HMO) and The Granary.
4. Immediately opposite the Stable Block and the Office Barn and outside of the site boundary is a Grade 1 listed Tithe Barn owned by English Heritage which contains two small maternity roosts of Soprano Pipistrelle and Brown Long-eared bats.
5. The initial assessment of the buildings found that the former Stable Block, the Office Barn and The Granary all had MODERATE potential for roosting bats with Manor Lodge having NEGLIGIBLE potential.
6. Of the three buildings with potential for roosting bats only the Stable Block and the office barn are to be developed and required further surveys consisting of two emergence surveys.
7. No bats were found using the Stable Block and the Office Barn during the emergence surveys. However bats were noted emerging from the Tithe Barn and St Mary the Virgin church alongside the eastern boundary of the site.
8. Bats were noted foraging and commuting along the eastern and western boundaries of the site and occasionally around the front of the Stable Block around the tree. Care should be taken to leave the boundaries of the site and the Tithe Barn unlit so that bats continue to use these commuting and foraging areas.
9. It is suggested that as part of the development two Schwegler 1FQ bat boxes are attached to the exteriors of the Stable Block and the Office Barn.
10. No further surveys are required of these buildings if development commences within 12 months. If development commences outside of 12 months the surveys will need to be repeated.

CONTENTS

1	INTRODUCTION	4
1.1	Purpose of this Report.....	4
1.2	Background to the Activity/Development	4
1.3	Full details of the proposed works at the site	4
1.4	Structure of this Report	5
2	SURVEY AND SITE ASSESSMENT	6
2.1	Pre-existing information on the bat species at the site.....	6
2.2	Status of the Species at the site.....	6
2.3	Objectives of the Survey to inform this Proposal	6
2.4	Site/Habitat Description	7
2.4.1	Site Description	7
2.4.2	Description of offsite areas.....	8
2.5	Field Surveys.....	8
2.5.1	Visual Inspections of Buildings.....	8
3	FIELD SURVEY METHODS	11
3.1	Survey Methods.....	11
3.2	Survey Methods for Visual Inspection of Buildings	11
3.2.1	Emergence Survey Methods	13
3.2.2	Ground Level Inspection Methods for Trees	13
4	SURVEY RESULTS	14
4.1	Visual Inspections of Buildings.....	14
4.1	Visual Inspections of Trees	15
4.2	Emergence Survey Results.....	15
4.2.1	Survey 10.05.17 – Stable Block	15
4.2.2	Survey 15.5.17 – Office Barn	15
4.2.3	Survey 5.6.17 – Stable Block	15
4.2.4	Survey 6.6.17 – Office Barn	16
4.2.5	Survey 3.7.17 – Stable Block	16
4.2.6	Survey 4.7.17 – Office Barn	16
4.3	Summary of Bat Activity	16
5	INTERPRETATION/EVALUATION OF SURVEY RESULTS.....	17
5.1	Interpretation/Evaluation of surveys	17
5.2	Recommendations.....	18
6	FIGURES AND PHOTOGRAPHIC PLATES	19
6.1	Figures.....	19
6.2	Photographic Plates	20
7	REFERENCES	26
	APPENDIX A – RELEVANT LEGISLATION	27

1 INTRODUCTION

1.1 Purpose of this Report

This report presents the results of an Initial Bat Assessment (IBA) and emergence surveys undertaken to accompany a planning application for the conversion of four buildings at Manor Court, Harmondsworth, West Drayton, Middlesex, UB7 0NL (Ordnance Survey grid reference TQ 056 777). The works proposed include the conversion of three buildings to residential units however The Granary will be used as an ancillary store to the residential buildings but will remain undeveloped. *Figure 1* shows the site location and an aerial photograph of the site and *Figure 2* shows the site layout.

1.2 Background to the Activity/Development

Manor Court consists currently of four buildings;

1. Manor Lodge currently in use as a temporary HMO, but development will convert the building into two semi detached houses;
2. The former Stable Block currently configured as offices but this development will convert the building into 4 x 1 bedroom flats, 2 x 2 bedroom flats and 2 x 2 bedroom house;
3. The Office Barn currently configured as offices but this development proposes converting the building into 1 x Studio Flat, 1 x 1 Bedroom Flat, 2 x 2 Bedroom House and 1 x 3 Bedroom House.
4. The Granary currently used as a store and to be retained as a garden store.

Buildings 2, 3 and 4 are currently unoccupied and have been for some time, whereas Building 1 is currently configured as a HMO and has permission to be used as a HMO for three years.

1.3 Full details of the proposed works at the site

It is proposed to carry out the following works:

1. Building 1 – Internal reconfiguration of the building to convert the building into 2 four bedroom houses.
2. Building 2 – Internal reconfiguration of the existing building into 4 x 1 bedroom flats, 2 x 2 bedroom flats and 2 x 2 bedroom house which will involve the removal of internal walls, construction of new walls and repair of the existing roof covering.
3. Building 3 – Internal reconfiguration of the existing building into 1 Studio Flat, 1 x 1 bedroom flat, 2 x 2 bedroom house and 1 x 3 bedroom house which will involve the removal of internal walls, construction of new walls and repair of the existing roof covering.
4. Building 4 – No works proposed as this is to be retained as a store.

1.4 Structure of this Report

The remainder of this report is structured as follows:

- *Section 2* describes the survey and assessment methods;
- *Section 3* presents the survey results;
- *Section 4* evaluates the results;
- *Section 5* lists the references; and
- *Section 6* provides the figures and plates.
- *Appendix A* explains the protected species legislation;

2 SURVEY AND SITE ASSESSMENT

2.1 Pre-existing information on the bat species at the site

There is no knowledge of any bats using the four buildings at the site that are the subject of this report.

However there are bats present within the Grade 1 listed Tithe Barn immediately adjacent to Buildings 2 and 3. This building has recently been the subject of a European Protected Species Licence (EPSL) application on behalf of the owners English Heritage as part of the restoration of the barn. The EPSL was for two species *Plecotus auritus* (Brown Long-eared bat) and *Pipistrellus pygmaeus* (Soprano Pipistrelle) bats. Two small maternity colonies were discovered using the barn. The works on the Tithe Barn are now completed.

2.2 Status of the Species at the site

Table 1 Status of Species at the ssite

Species	Conservation Status Assessment		
	Local	County	Regional
<i>Pipistrellus pygmaeus</i> (Soprano Pipistrelle)	This bat is frequent and common in the local area	This bat is frequent and common throughout Middlesex and is the second most frequent species encountered	This bat is frequent and common throughout the South East of England and is the second most frequent species encountered.
<i>Plecotus auritus</i> (Brown Long-eared)	This bat is frequent and common in the local area of the London Borough of Hillingdon	This bat is frequent and common throughout Middlesex and is the Third most frequent species encountered	This bat is frequent and common throughout the South East of England and is the second most frequent species encountered.

2.3 Objectives of the Survey to inform this Proposal

The objectives of the surveys were to:

- establish the potential for bats to roost within the buildings;
- establish the presence or absence of bat roosts in the buildings;

- confirm species identification and possible roost status of any bats roosting in the buildings;
- confirm exit and entry points for any bats using the buildings; and or impact on bat use of the surrounding area.
- Confirm if the works would impact on any identified roosts within the buildings.

The above information enables an accurate assessment of the potential impacts of the proposed works.

2.4 Site/Habitat Description

2.4.1 Site Description

The site is on the western edge of Harmondsworth in Middlesex. The site consists of four buildings that form part of the Manor Farm complex. Outside of the site boundary but immediately opposite the Office Barn is a Grade 1 listed Tithe Barn owned by English Heritage.

All open areas of the site consist of amenity grassland and hard standing. There is a tree line of conifers along the eastern side of the site separating the site from the local parish church.

Table 2 - Building Descriptions

Building	Building Description
Manor Farmhouse	The house is of brick construction constructed over two floors. The house has a slate roof which is in excellent condition.
Former Stable Block	This building is constructed from brick over two floors. The building has a pitched clay tile roof with some missing tiles and the majority of tiles which are handmade are uneven with many gaps. The roof has valleys and gable ends, There are two small dormers on the rear of the building. Internally the building has been converted throughout into office space. The building does not have a loft void with all offices on the first floor being extant to the roof covering. There is a small inaccessible void between the roof tiles and the internal ceilings.
Office Barn	This is a large building constructed as offices. The building is constructed from brick, with a pitched clay tile roof. There are corrugated panels within the lower levels of the roof on its eastern elevation. There are three large dormers within the western elevation of the building. The building exterior is generally well maintained with no gaps or crevices within the walls. The roof tiling is uneven with a few missing tiles and many gaps beneath the tiles. The interior of the building is open

	plan over both floors and is extant to the roof. There is a single small void within the building at its north-east corner where there is a void containing water tanks etc. This void is extant to the roof showing that the roof has an F1 bitumastic lining. The rest of the building has a small inaccessible void between the roof covering and the internal ceilings.
The Granary	This is a small square timber framed building with a pitched and hipped roof covered with clay tiles. Internally the building is open to the roof.

2.4.2 Description of offsite areas

The surrounding landscape is characterised by agricultural fields and patches of woodland to the north, east and south. Heathrow Airport is 800 meters to the south of the site.

There are numerous lakes all within 1km of the site to the south, west and north of the site. There are small areas of woodland to the west, and north-west providing some areas of potential foraging for bats.

There is the M4 motorway ½ km to the north and the M25 1km to the west of the site. These motorways are likely to form a barrier to dispersal of bats that are present at the site.

2.5 Field Surveys

2.5.1 Visual Inspections of Buildings

Table 3 – Details of Visual Inspections of Building

Date of Survey Visit	Structure Reference	Equipment Used	Weather - Temperature Beaufort Wind Scale Precipitation
22.02.2016	Buildings 1, 2, 3 and 4	Hand Held Lamps, Mirrors	6°C 1 Light Drizzle
Comments:	This survey was carried out by David Cove Principle Ecologist Licence No: 2015-14432-CLS-CLS Natural England Class Registration 00727 Licence		

	Level 3
--	---------

Table 4 - Emergence Surveys of buildings

Date of Survey Visit	Structure Reference	Equipment Used	Weather - Temperature Beaufort Wind Scale Precipitation
10.05.2017	Former Stable Block	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	19°C 1 Nil
Comments:	No constraints to survey		
15.05.2017	Office Barn	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	18°C 1 Nil
Comments:	No constraints to survey		
05.06.2017	Former Stable Block	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	19.3°C 2 - 3 Nil
Comments:	No constraints to survey		
06.06.2017	Office Barn	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	18.4°C 5 - 6 Nil
Comments	Survey abandoned after 45 minutes due to high winds.		

03.07.2017	Office Barn	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	16.7°C 1 - 2 Nil
Comments:	No constraints to survey		
04.07.2017	Former Stable Block	Bat Detectors and stereo recorders. Bat detectors included BatLogger M and BatBox Batons	17.2°C 1 - 2 Nil
Comments	No constraints to survey		

Table 5 – Surveyor details for visual inspections and Emergence Surveys

Survey Type	Surveyor Details:
Initial Bat Assessment	David Cove Principle Ecologist Licence No: 2015-14432-CLS-CLS Natural England Class Registration 00727 Licence Level 3 Jess Breeze Ecologist Licence No:2015-17895-CLS-CLS Natural England Class Registration 179117 Licence Level 2
Emergence Surveys	David Cove Principle Ecologist Licence No: 2015-14432-CLS-CLS Natural England Class Registration 00727 Licence Level 3 Jess Breeze Ecologist Licence No:2015-17895-CLS-CLS Natural England Class Registration 179117 Licence Level 2. Jade Brennan Assistant Ecologist. Trained in conducting emergence surveys Luke Burgess Assistant Ecologist. Trained in conducting emergence surveys Amy Copping Assistant Ecologist. Trained in conducting emergence surveys Cecilia Montauban Graduate Ecologist Trained in conducting emergence surveys

3 FIELD SURVEY METHODS

3.1 Survey Methods

All surveys were designed and carried out following the guidance in the Bat Survey Guidelines for Professional Ecologists (Collins, 2016¹).

3.2 Survey Methods for Visual Inspection of Buildings

Ecologists from RSK Environment inspected the building internally and externally using the methods described below:

The building was assessed for its suitability to support roosting bats using primarily a 1,000,000-candle power torch but also binoculars, ladders and an endoscope where necessary. The buildings were assessed for their bat roost potential according to the following factors that influence the likelihood of bat roosting.

- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
- Construction detail: the type and construction of architectural features such as drainage pipes or naturally occurring voids within the buildings.
- Building condition: Whether there were suitable gaps within the external construction of the buildings that may give access to internal voids.
- Internal conditions: bats favour sheltered locations with a store temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat-access points: whether there is flight and crawl access.
- Potential roosting locations: descriptions of all bat-accessible voids, cracks and crevices.

A description of each building was recorded on survey sheets, and digital photographs of them were taken as a record. The buildings were categorised into a standard scheme as described in *Table* below.

¹ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Table 6. Classification Criteria for Bat Roosting Potential of Buildings and Built Structures.

Category (Potential to support roosting bats)	Description
Negligible potential	Buildings with no features suitable for supporting roosting bats. Modern, well maintained buildings or built structures that provide few opportunities for bat access/roosting (<i>i.e.</i> with no cracks or crevices); composed of prefabricated steel and sheet materials; no internal loft space; high level of regular disturbance; high interior light levels and subject to large temperature fluctuations. Buildings may be surrounded by poor or sub-optimal bat foraging habitat. No evidence of bats found.
Low Potential	Buildings with limited features to support roosting bats - shallow crevices where mortar is missing between brickwork. Buildings may have large open locations subject to large temperature fluctuations. Buildings may be surrounded by poor or sub-optimal bat foraging habitat. No evidence of bats found.
Moderate potential	Buildings with some features suitable for roosting bats – building usually of brick or stone construction with a small number of features suitable for roosting bats – loose roof or ridge tiles, gaps in brickwork, gaps under fascia boards, and/or sealed internal loft space. No evidence of bats found.
High Potential	Buildings with a large number of features or extensive areas with potential for roosting bats. Sheltered locations with a store temperature regime and suitable access points. Features can include: weatherboarding and/or hanging tiles with gaps/large (>20cm) roof timbers with mortise joints, cracks, holes); poorly maintained fabric providing ready access into roofs, walls, but at the same time not being draughty and cool; large and complicated roof void with unobstructed flying spaces. No evidence of bats found.
Confirmed roost	Bats or evidence of bats recorded within the building during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

A visual and systematic examination of the building was made for bats and evidence of bats, both internally and externally where access was made. Features inspected (if present) included:

- roof slopes and the ridge;
- wall, window and door surfaces;
- window and door frames;
- wall bases;
- wall ledges and wall tops;
- cracks, crevices and sheltered voids;
- the floors and stored items; and
- external features such as soffits and lead flashing.

Evidence of roosting bats includes droppings, urine stains, staining from fur-oils, scratch marks, wear marks, feeding remains, dead bats, odour, squeaking and chattering, and in some cases the absence of cobwebs.

Bat droppings provide evidence that bats use a structure and can help to identify roosting locations where piles accumulate beneath roosting sites or entrance points. The location, size, shape, texture and colour of the droppings can be used to aid

species identification. All droppings found were compared to a reference collection of droppings from known species. The number and condition (age) of droppings can indicate the size of the roost and when it was last used.

3.2.1 Emergence Survey Methods

Surveyors were positioned around the building so that all elevations of the building were clearly visible and where surveyors were able to observe any bats emerging from the building. The surveys commenced 15 minutes before dusk and concluded 2 hours after dusk. Surveyors were also equipped with ultrasonic bat detectors so as to record the echolocation of any bats that were present either emerging from buildings or commuting and foraging around the site. These calls were recorded to a stereo recorder or in some cases direct to an SD Card within the bat detector. Where there was any doubt about the species recorded the calls were identified using computer software including BatExplorer, BatSound and Kaleidoscope.

3.2.2 Ground Level Inspection Methods for Trees

All trees on site were inspected from ground level using high powered binoculars to identify Potential Roost Features including splits, rot holes, woodpecker holes, dense ivy cover and any other feature that may have provided potential roost features suitable for bats. Any PRF's identified were graded using the grading system from the Bat Survey Guidelines (Hundt, 2012).

Table 7 - Tree assessment categories for potential bat roosts

Tree Category (Potential to support roosting bats)	Description
Known or Confirmed Roost	Roost confirmed
Category 1*	Trees with multiple, highly suitable features capable of supporting larger roosts
Category 1	Trees that have a high potential to support bat roosts, with fewer features than Category 1*, or potential to be used by single bats
Category 2	Trees with a moderate/low potential to support bat roosts. There are no obvious features, but the tree is of an age and size where an elevated survey may result in features being found.
Category 3	Trees with negligible potential to support bat roosts