Orchard Lane / East Molesey

Preliminary Bat Roost Assessment

19th May 2023 I A3711

ORCHARD LANE, EAST MOLESEY

PRELIMINARY BAT ROOST ASSESSMENT

A Report to: CIRC Management LLP

Report No: RT-MME-153535-02

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	14/10/2020	Harry Stone MSc (Ecological Project Officer)	Paul Roebuck MSc MCIEEM (South East Manager)	Tom Docker CEcol MCIEEM (Managing Director)
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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

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

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

In September 2020, CIRC Management LLP commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment of a number of buildings on Orchard Lane, East Molesey. This assessment is required to inform a planning application associated with the redevelopment of the site. To fulfil the above brief to assess the potential for the existing buildings on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 23rd September 2020.

The assessment identified buildings B1, B2, B4, B5 and B6 as having high potential to support roosting bats. This was due to a variety of features predominantly associated with the roofs of these buildings, such as lifted tiles and gaps at the eaves. Building B7, currently used as a horticultural centre, was assessed as having low potential to support roosting bats due to the presence of missing mortar beneath roof tiles. Smaller additional buildings on site had negligible potential.

Following the results of the Preliminary Bat Roost Assessment, the following recommendations have been made:

R1 Buildings B1, B2, B4, B5 and B6
These buildings, alternatively known as Molesey Venture, Newstead House and Sundial House, have been assessed as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for structures with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the structures. The bat emergence/re-entry survey season extends from May to September. At least two of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August and one of the three surveys should be a dawn re-entry survey. If a roost is discovered during these surveys, a Natural England licence application may be required.

R2 Building B7
The horticultural centre has been assessed as having low potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust recommends for structures with low bat roosting potential that at least one survey be undertaken during the peak season for emergence/re-entry surveys (May to August) to determine the presence/absence of roosting bats within the structure. Should this survey confirm the presence of roosting bats, it will be necessary to undertake additional surveys in order to inform a Natural England licence application. In addition, should the survey identify the presence of significant levels of bat activity at the site, it may be necessary to undertake further survey visits to comprehensively assess the value of the site to bats.

R3 Greenhouse and Sheds
The smaller additional buildings on site (a large glass greenhouse, a terrace of sheds and three wooden garden sheds) were fully inspected and no bat roosts were identified. These buildings had negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date.

R4 Lighting
In line with paragraph 180 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats. A lighting strategy should be designed and implemented on site to avoid impacting bat usage of the site and wider area. The strategy should be designed in accordance with the principles of 'Landscape and urban design for bats and biodiversity' and 'Bats and artificial lighting in the UK' as published by the Bat Conservation Trust (Gunnell *et al*, 2012 and Miles *et al*, 2018 respectively).

R5 Habitat Enhancement
In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Planting of trees, shrubs and herbs which attract night flying insects is encouraged as this will be of value to foraging bats. Bat boxes should also be incorporated into the new development.

CONTENTS

1. INTRODUCTION

1.1 PROJECT BACKGROUND

In September 2020, CIRC Management LLP commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment of a number of buildings on Orchard Lane, East Molesey. This assessment is required to inform a planning application associated with the redevelopment of the site.

In addition, Middlemarch Environmental Ltd has been commissioned to undertake a Preliminary Ecological Appraisal, the findings of which are detailed in report number RT-MME-153535-01 RevA.

To fulfil the above brief to assess the potential for the existing buildings on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 23rd September 2020 by Harry Stone MSc (Ecological Project Officer) and Indre Barsketyte (Principal Ecological Consultant).

All UK bat species are European 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. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The development site, which measures approximately 0.75 ha, is located within a suburban neighbourhood in the Borough of Elmbridge. The site is centred at National Grid Reference TQ 14625 67341. At the time of the survey, the site was dominated by buildings surrounded by hardstanding, with areas of introduced shrub and amenity grassland scattered throughout the site. A horticultural area dominated the north-eastern portion of the site and the River Ember was present at the site's western boundary. To the north of the site was a large area of rough grassland and woodland that formed part of the River Ember and River Mole green corridor. Orchard Lane was present to the south of the site. The surrounding landscape was highly suitable for foraging and commuting bats, containing habitats such as woodland, rough grassland, scrub, rivers, lakes and ponds.

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 1.1.

Document Name / Drawing Number	Author
Landscape Proposal	Exterior Architecture
Tree Retain + Removal Plan / 2241-EXA-XX-GF-DR-L-00150 Rev P02	Exterior Architecture
General Arrangement Plan Ground Floor / 2241-EXA-GF-DR-L-00101 Rev P01	Exterior Architecture
Roof Plan / A3711-ASA-ZZ-RP-DR-A-0215 Rev P21	Assael Architecture

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-153535-01 RevA) an ecological desk study (which included a search for records of bats) was undertaken within a 1 km radius of the site. The consultee for the desk study was Surrey Biodiversity Information Centre.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by this organisation. 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

In line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004) and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a Preliminary Bat Roost Assessment of the buildings and trees was conducted during daylight hours. A visual assessment was undertaken to determine the presence of any Potential Roost Features (PRFs), together with a general appraisal of the suitability of the site for foraging and commuting. Table 2.1 provides examples of PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence. All buildings were surveyed externally. Building B7 was not surveyed internally.

For reasons of health and safety, the survey was only undertaken in areas accessible from 3.5 m ladders.

Based on the PRF's present, the survey area was assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), as detailed in Table 2.2. Trees with features present that are suitable to support roosting bats (high and moderate suitability) are discussed more fully in the report.

A summary of the trees within the survey area without suitable features to support roosting bats (low and negligible suitability) is provided within the report. Due to their negligible potential to support roosting bats, the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) recommend no further survey work is required for these tree classes.

Example of Potential Roost Features
Buildings Externally • Access through window panes, doors and walls; • behind peeling paintwork or lifted rendering; • behind hanging tiles; • weatherboarding; • eaves; • soffit boxes; • fascias; • lead flashing; • gaps under felt (even including those of flat roofs); • under tiles/slates; • existing bat and bird boxes; and, • any gaps in brickwork or stonework permitting access into access to cavity- or rubble-filled walls. Internally • behind wooden panelling; • in lintels above doors and windows; • behind window shutters and curtains; • behind pictures, posters, furniture, peeling paintwork; • peeling wallpaper, lifted plaster and boarded-up windows; • inside cupboards and in chimneys accessible from fireplaces. • within attic voids: • the top of gable end or dividing walls; • the top of chimney breasts; • ridge and hip beams and other roof beams; • mortise and tenon joints; • all beams (free-hanging bats); • the junction of roof timbers, especially where ridge and hip beams meet; • behind purlins; • between tiles and the roof lining; and, • under flat felt roofs. **Trees** • Bat, bird and dormouse boxes on trees; • Cankers (caused by localized bark death) in which cavities have developed; • Compression forks with included bark, forming potential cavities; • Cracks/splits in stems or branches (both vertical and horizontal); • Crossing stems or branches with suitable space between for roosting; • Ivy stems with diameters in excess of 50 mm with suitable roosting space behind (or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk); • Man-made holes (e.g. cavities that have developed from flush cuts); • Natural holes (e.g. knot holes) arising from naturally shed branches, or cavities created by branches tearing out from parent stems; • Other hollows or cavities, including rot holes and butt rots; • Partially detached or loose, platy bark; • Woodpecker holes; or, • Other features that offer a place of shelter.

Table 2.1: Potential Roost Features (Adapted from Collins 2016 and BSI 2015)

Suitability	Description
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Negligible habitat features on site likely to be used by roosting bats.

Table 2.2: Classification of Buildings and Trees with Bat Potential (Adapted from Collins, 2016)

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 in September 2020 by Surrey Biodiversity Information Centre. 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 Study Area	Species of Principal Importance?	Legislation
Unidentified myotis *Myotis* sp.	1	2017	600 m north	-	ECH 4, WCA 5, WCA 6
Pipistrelle *Pipistrellus* sp.	1	2017	600 m north	#	ECH 4, WCA 5, WCA 6
Soprano pipistrelle *Pipistrellus pygmaeus*	3	2019	600 m north	✓	ECH 4, WCA 5, WCA 6
Common pipistrelle *Pipistrellus pipistrellus*	3	2019	600 m north	-	ECH 4, WCA 5, WCA 6
Leisler's bat *Nyctalus leisleri*	1	2017	600 m north	-	ECH 4, WCA 5, WCA 6
Nathusius's Pipistrelle *Pipistrellus nathusii*	1	2017	600 m north	-	ECH 4, WCA 5, WCA 6
Noctule *Nyctalus noctula*	2	2019	740 m north	✓	ECH 4, WCA 5, WCA 6
Unidentified bat *Chiroptera* sp.	1	2017	740 m north	#	#
Brown long-eared bat *Plecotus auritus*	1	2008	Potentially within a 1 km radius**	✓	ECH 4, WCA 5, WCA 6

Key:
**: Grid reference provided was two figures only.

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.

Species of Principal Importance: Species of Principal Importance for Nature Conservation in England.

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

4. SURVEY RESULTS

4.1 INTRODUCTION

The Preliminary Bat Roost Assessment was conducted on 23rd September 2020 by Harry Stone (Ecological Project Officer) and Indre Barsketyte (Principal Ecological Consultant). Drawing C153535-02-01, illustrating the layout of the buildings on site is provided in Chapter 7.

Weather conditions were recorded and are presented in Table 4.1.

Parameter	Conditions
Temperature (°C)	15
Cloud Cover (%)	100
Precipitation	Light rain
Wind Speed (Beaufort)	F2

Table 4.1: Weather Conditions During the Preliminary Bat Roost Assessment

4.2 CONSTRAINTS

It was not possible to fully enter the loft spaces of buildings B1 and B6 due to their low height and crawlspace issues. Water tanks present within building B1 also obscured view of entire loft space. It was not possible to fully inspect all sections of the loft spaces of buildings B2 and B5 due to access issues and dividing walls. While it was not possible to inspect a loft void above a ground-floor extension to building B4, this was not considered a significant constraint as after an external inspection, the loft void was not found to be accessible to roosting bats.

Not all of internal rooms of the buildings were inspected during the survey due to covid-19 restrictions, however this was not considered a constraint as the rooms that were inspected were clearly unsuitable for roosting bats. It is understood that the internal rooms of the buildings surveyed are in regular use and therefore anticipated to be similarly unsuitable. Due to covid-19 restrictions it was not possible to carry out an internal inspection of building B7 and its possible loft space. For reasons of health and safety, the survey was only undertaken in areas accessible from 3.5 m ladders.

4.3 SURVEY RESULTS – BUILDINGS

The site contained six residential buildings and a horticultural centre. Buildings B2, B4, B5 and B6 were of similar structure and design while buildings B1 and B7 appeared to be newer. The layout of the buildings is illustrated in Drawing C153535-02-01 in Chapter 7. Building B3 was not surveyed as it will not be impacted by the proposed development.

4.3.1 B1 (Molesey Venture)

External Assessment
Building B1 was a U-shaped modern building with brick walls and a pitched clay tile roof (Plate 4.1). The end roof tiles were inspected using a torch and did not have gaps extending into crevices nor into the loft space. No lifted, slipped, or missing roof tiles were recorded (Plate 4.2). The building had a wooden soffit throughout. This soffit was in good condition with small holes in places associated with pipe vents (Plate 4.3). No cracks or holes were recorded in the brickwork and no gaps were recorded around the window and door-frames. No evidence of bats was recorded although not all features could be inspected fully due to the height and location on the building.

Internal Assessment
The internal rooms and corridors of the building were in constant residential use and in good condition with no suitable features for roosting bats. The loft space of the building was approximately 1 m tall, 6 m wide, and followed the U-shape of the building making it approximately 70 m long. It had breathable membrane sarking and a wooden ridge beam was present (Plate 4.4). The loft space was well insulated and water tanks were present. No evidence of bats such as droppings or foraging remains was recorded within the loft space.

Plate 4.1: South-facing Aspect, B1

Plate 4.2: Clay Roof Tiles, B1

Plate 4.3: Gap Around Piping, Soffit Box, B1

Plate 4.4: Loft Space, B1

4.3.2 B2 (Newstead House)

External Assessment
Building B2 was an early-mid 20th century terrace of apartments. It was brick-built, two storeys tall, and had a pedestrian walkway on its east-facing aspect that created a canopy over the entrances to the ground floor apartments (Plate 4.5). No cracks or crevices were recorded under this canopy. On the west-facing aspect the building overlooked the River Ember (Plate 4.6). The roof was constructed from clay tiles, many of which were lifted. Gaps under the ridge tiles were also recorded. On the building's north-facing gable end there was a substantial amount of missing brickwork and mortar (Plate 4.7). Gaps were present between the roofbeams and the brickwork at the roof's eaves (Plate 4.8). No evidence of bats was recorded although not all features could be inspected fully due to the height and locations on the building. The chimneys were in good condition with no cracks or lifted lead flashing observed. Elsewhere there was no further potential bat roost features. An extension structure was present at the north of the building, built from sheet metal. This extension did not have any features which might be utilised by roosting bats.

Internal Assessment
The roof contained a loft space approximately 30 m in length that was divided by brick walls (Plate 4.9). Two of these divided sections were inspected, accessed via loft hatches in individual apartments. The internal rooms of these apartments were considered unsuitable for roosting bats. The loft spaces were approximately 2 m tall by 6 m wide. They had wooden ridge beams and felt sarking. The sarking was torn and missing in places, exposing the roof tiles (Plate 4.10). Wasp nests, mouse droppings and rat droppings were prevalent. No evidence of bats, such as droppings or foraging remains, was however recorded.

Plate 4.5: East-facing Aspect, B2

Plate 4.6: West-facing Aspect, B2

Plate 4.7: North-facing Gable End, B2

Plate 4.8: Gaps at Eaves, B2

Plate 4.9: Loft Space, B2

Plate 4.10: Torn Felt Sarking & Wasp Nest

4.3.3 B4 (Sundial House, Northern Section)

External Assessment
This building was an early-mid 20th century building constructed with brick walls and a pitched clay tile roof. On its north-facing aspect there was a small single-storey extension with an enclosed loft void that was not inspected (Plate 4.11). No access points into this ground-floor loft void, such as lifted tiles or gaps around the fascia boarding, were recorded. On the south-facing aspect of the roof there was a decorative hanging tile feature (Plate 4.12). The roof had a modest amount of moss cover and appeared generally to be in a good

state of repair. Lifted tiles were however recorded in places. A plastic soffit box was present beneath sections of the roof, and where this soffit met the gable end there were large gaps potentially leading into the loft space (Plate 4.13). Missing mortar was also recorded in these locations underneath bottom roof tiles. No evidence of bats was recorded although not all features could be inspected fully due to the height and locations on the building. Elsewhere the structure had no suitable bat roosting features.

Internal Assessment
The main roof contained a loft space that was roughly T-shaped, approximately 2 m tall by 10 m wide and long. The loft space contained a water tower and had a window that illuminated approximately a third of the space. Wooden ridge beams and felt sarking were present. Light was observed entering the loft space through gaps at the eaves. No evidence of roosting bats was found during the loft inspection.


Plate 4.11: North-facing Aspect, B4


Plate 4.12: Hanging Tile Feature, B4


Plate 4.13: Gaps Around Soffit, B4


Plate 4.14: Loft Space, B4

4.3.4 B5 (Sundial House, Southern Section)

External Assessment
Building B5 adjoined Building B6 at its north and was a very long single-storey building (Plate 4.15). As with buildings B2 and B4 its walls were made from unrendered brickwork and its roof from clay tiles. The roof had lifted tiles and gaps under ridge tiles. The building had no soffit or fascia, and gaps leading directly into the loft space were recorded at the eaves. No evidence of bats was recorded although not all features could be inspected fully due to the height and locations on the building. Elsewhere the structure had no suitable bat roosting features.

Internal Assessment)
The building's internal rooms were considered both unsuitable for and inaccessible to roosting bats. The loft space was approximately 2 m tall, 6 m wide, and 40 m in length with few dividing brick walls (Plate 4.17). It

was heavily insulated and had felt sarking that appeared to be in good condition. Wooden ridge beams were present and the space was not cobwebbed. Gaps at the eaves were clearly visible (Plate 4.18).

Plate 4.15: West-facing Aspect, B5

Plate 4.16: West-facing Aspect, B6

Plate 4.17: Loft Space, B6

Plate 4.18: Gaps at Eaves, Light Entering

4.3.5 B6 (Residential Cottage)

External Assessment
The residential cottage situated in the southeast corner of the site was of early-mid twentieth century design and had rendered brick walls (Plate 4.19). It had a pitched clay tile roof over the main section of the building, with smaller sections of flat roof to its west and north. No lifted roof tiles were recorded, and moss was observed growing around the ridge tiles, blocking any potential gaps there. Missing mortar was recorded at the lowermost ridge tiles, while lifted lead flashing at the base of the chimneys potentially concealed access points to the loft space or crevice features that might be used by roosting bats (Plate 4.20). The buildings wooden fascia boards were flush and no holes or cracks were recorded on the external walls. No evidence of bats was recorded although not all features could be inspected fully due to the height and locations on the building. Elsewhere the structure had no suitable bat roosting features.

Internal Assessment
The internal rooms of the building were unsuitable for and inaccessible to roosting bats. Two loft spaces were inspected, both of which were approximately 1 m in height (Plate 4.21). Light was recorded entering the smaller loft space at the edge of the gable end where the brickwork met the tilework (Plate 4.22). Both loft spaces were very damp and wasp nests, disused bird nests, mouse droppings and rat droppings were recorded in both. Wooden ridge beams were present and the spaces were well insulated.

Plate 4.19: Southeast-facing Aspect, B6

Plate 4.20: Lifted Lead Flashing & Missing Mortar, B6

Plate 4.21: Larger Loft Space, B6

Plate 4.22: Access Point to Smaller Loft Space, B6

4.3.6 B7 (Horticultural Centre)

External Assessment
This building was a single-storey rectangular building with a pitched clay tile roof (Plate 4.23). It had unrendered brick walls and was currently in use as a horticultural and arts centre. The building appeared to be in good condition with no gaps in the brickwork nor any lifted or slipped roof tiles. Missing mortar was recorded below tiles at the north-facing gable end of the building (Plate 4.24). The building was not internally inspected due to covid-19 restrictions.

Plate 4.23: Southeast-facing Aspect, B7

Plate 4.24: Missing Mortar, B7

4.3.7 Greenhouse and Sheds

Several small additional buildings were present on site. These included a large glass greenhouse (Plate 4.25) and a terrace of sheds that adjoined building B4 (Plate 4.26). The terrace of sheds had a simple lean-to roof made from sheets of corrugated metal and plastic. Three wooden garden sheds were clustered nearby (Plate 4.27 and 4.28).

Plate 4.25: Greenhouse

Plate 4.26: Terrace of Sheds

Plate 4.27: Smaller Wooden Sheds

Plate 4.28: Larger Wooden Shed

4.4 TREES

None of the trees within the development site boundary exhibited potential crevice or cavity features that might be utilised by roosting bats, such as knotholes or significant standing dead wood. The trees were therefore assessed as having low and negligible potential to support roosting bats and no further survey effort was recommended. Trees were further assessed on 14th April 2023 and not found to have developed potential roosting features.

One tree at the northern boundary (approximate location https://what3words.com/flows.foam.dart) had a wooden bird box affixed to its trunk. This bird box was thoroughly inspected on 14th April 2023 using an endoscope and no evidence of roosting bats, such as droppings or foraging remains, was recorded within the bird box.

Plate 4.29: A mature eucalyptus tree trunk devoid of potential roosting features for bats

Plate 4.30: Bird box affixed to a tree

4.5 SITE AND SURROUNDING HABITATS

The site contains suitable foraging habitat for bats in the form of scrub, introduced shrub, amenity grassland, rough grassland and scattered trees. Commuting features for bats include mature trees at the site boundaries.

The site is connected to highly suitable foraging and commuting habitat. To the north of the site is a large area of rough grassland interspersed with patches of scrub and woodland, while the site's eastern boundary abuts large residential gardens. The River Ember is located along the site's western boundary. The immediate surrounding landscape is unilluminated, full of further highly suitable habitat for bats, and continues as such uninterrupted by the built environment, beyond the M25 and into the rural environment. To the northeast, the site is well connected to Bushy Park and Home Park SSSI via the rivers Ember, Mole and Thames.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF PROPOSALS

The proposed redevelopment of the site will involve the demolition of buildings B1, B4, B5, B6 and B7. The river wall of Building B2 (Newstead House) is to be retained, but the building otherwise demolished. The redevelopment of the site will entail demolition (or partial demolition) of all existing buildings and the erection of 3 buildings comprising 74 residential units (15 x 1 bed, 48 x 2 bed and 11 x 3 bed) and ancillary facilities for residents, underground and surface level car and cycle parking, mechanical plant, soft and hard landscaping and associated diversion of existing Thames Water pipe.

5.2 ASSESSMENT OF BUILDINGS

Building B1 had several access points in its wooden soffit that potentially provide direct access to the loft space. It was not possible to fully inspect the loft space due to its low height and due to water tanks obscuring views of the whole space. As such the building is assessed as having high potential to support roosting bats.

Buildings B2, B4 and B5 were similar in their structure and design. They were of early-mid 20th century design and were characterised by pitched clay tile roofs and unrendered brick walls. On each of these buildings, gaps were recorded at the eaves leading directly into loft spaces. Lifted roof tiles were also recorded on the roofs of these three buildings, creating the possibility for bats to roost in the gap between roof tiles and felt sarking. Features unique to building B4 included a hanging tile feature on the south-facing aspect and gaps surrounding a plastic soffit. Gaps under ridge tiles were recorded on buildings B2 and B5. Building B2 was immediately bordered at its west-facing aspect by the River Ember. This stretch of the river was highly suitable for bats due to an absence of lighting and high levels of vegetation and tree cover. As such building B2 directly connects to a suspected commuting corridor for bats. With these considerations the buildings B2, B4 and B5 are assessed as having high potential to support roosting bats.

Building B6 had missing mortar associated with ridge tiles and lifted lead flashing associated with its chimneys. Its loft spaces appeared to be accessible to roosting bats and therefore the building is assessed as having high potential to support roosting bats. Building B7 was in a good state of repair with the exception of a small amount of missing mortar below the roof tiles at its north-facing gable end. In consideration of this single potential roosting feature, the building is assessed as having low potential to support roosting bats.

The additional buildings on site – a glass greenhouse and multiple sheds – are assessed as having negligible potential to support roosting bats due to an absence of features such as crevices, enclosed voids and cavities.

While no evidence of roosting bats was recorded in any of the buildings on site, the possibility of their presence cannot be eliminated because bats may roost between felt sarking and roof tiles. Furthermore, with the exception of Building B4, none of the loft spaces could be fully inspected due to dividing walls within the lofts, water tanks obstructing access, health and safety concerns regarding crawlspaces, and covid-19 restrictions. The presence of wasp nests, bird nests, mouse droppings and rat droppings in buildings B2, B4, B5 and B6 further highlights their suitability for roosting bats, as it indicates access is feasible to fauna into the roof spaces.

5.3 POTENTIAL IMPACTS ON BATS

It is considered possible that the buildings on site contain bat roosts. As such, their demolition or refurbishment risks destroying bat roosts.

The removal of vegetation (trees, shrub, scrub, and grassland) risks impacting upon both foraging and commuting bats in the short term. This can however be compensated for by soft landscaping that provides habitats similarly suitable for foraging and commuting bats.

Any new lighting, particularly at the site's western boundary where it is proposed that Orchard Lane will be extended towards, risks introducing light pollution to the River Ember and thereby fragmenting bat habitat.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd'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 Buildings B1, B2, B4, B5 and B6

These buildings, alternatively known as Molesey Venture, Newstead House and Sundial House, have been assessed as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for structures with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the structures. The bat emergence/re-entry survey season extends from May to September. At least two of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August and one of the three surveys should be a dawn re-entry survey. If a roost is discovered during these surveys, a Natural England licence application may be required.

R2 Building B7

The horticultural centre has been assessed as having low potential to support roosting bats. Bat Surveys: Good Practice Guidelines, published by the Bat Conservation Trust (Collins, 2016), recommends for structures with low bat roosting potential that at least one survey (consisting of either a dusk emergence survey or a dawn re-entry survey) be undertaken during the peak season for emergence/re-entry surveys (May to August) to determine the presence/absence of roosting bats within the structure. Should this survey confirm the presence of roosting bats, it will be necessary to undertake additional surveys in order to inform a Natural England licence application. In addition, should the survey identify the presence of significant levels of bat activity at the site, it may be necessary to undertake further survey visits to comprehensively assess the value of the site to bats.

R3 Greenhouse and Sheds

The smaller additional buildings on site (a large glass greenhouse, a terrace of sheds and three wooden garden sheds) were fully inspected and no bat roosts were identified. These buildings had negligible potential for roosting bats. 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 suitable features have developed and if bats have colonised the buildings in the interim. In the unlikely event that a bat is found during demolition works all works must immediately cease and a suitably qualified ecologist should be contacted.

R4 Lighting

Bats are likely to use trees for foraging and commuting. Therefore, in line with paragraph 180 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats through the careful use of lighting in critical areas only and at a low level with minimum spillage. Any lighting, either temporary or permanent, along the site boundaries (especially along the western and northern boundaries where the site abuts the River Ember and a large expanse of rough grassland, respectively) should be kept to a minimum and directed away from the boundary features to maintain dark areas and corridors. A lighting strategy should be designed and implemented on site to avoid impacting bat usage of the site and wider area. The strategy should be designed in accordance with the principles of 'Landscape and urban design for bats and biodiversity' and 'Bats and artificial lighting in the UK' as published by the Bat Conservation Trust (Gunnell *et al*, 2012 and Miles *et al*, 2018 respectively). Materials used under lights, such as floor surfaces, should be materials that have a minimum reflective quality to prevent light reflecting upwards into the sky. This will ensure that bats using the site and surrounding area to roost/forage/commute are not affected by illumination.

R5 Habitat Enhancement

In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Bat boxes should be installed to provide roosting habitat for species such as pipistrelle. In

general, bats seek warm places and for this reason boxes should be located where they will receive full/partial sun, although installing boxes in a variety of orientations will provide a range of climatic conditions. Position boxes at least 4 m above ground to prevent disturbance from people and/or predators. Planting of trees, shrubs and herbs which attract night flying insects is encouraged as this will be of value to foraging bats. Examples include: hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior*, willow *Salix spp.*, wild carrot *Daucus carota*, cowslip *Primula veris*, valerian *Valeriana spp.*, honeysuckle *Lonicera periclymenum* and fleabane *Pulicaria dysenterica*.

7. DRAWINGS

Drawing C153535-02-01 – Preliminary Bat Roost Assessment

514600

167400

B1

B8 1

B4

B7

B5

B2

B6

B3

167300

0 25 50 m

514600

Legend

- Site boundary
- Building surveyed
- High potential for roosting bats
- Low potential for roosting bats
- Negligible potential for roosting bats
- Gaps at eaves around roof beams
- Gaps in roof and ridge tiles
- Missing mortar at base of ridge tiles, lifted lead flashing
- Gaps around soffit
- Hanging tiles
- Missing brick, gable end
- Missing mortar below roof tiles
- Soffit, gaps around pipes
- Area not surveyed
- Target note
  1. Greenhouse

Project: Orchard Lane, East Molesey

Drawing: Preliminary Roost Assessment

Client: CIRC Management LLP

Drawing Number	Revision
C153535-02-01-RevB	Rev B
Scale @ A3	Date
1:500	September 2021
Approved By	Drawn By
HS	JR

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C153535-02-01-RevB

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The Conservation of Habitats and Species Regulations 2017.

APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017). 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.

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.

For England:
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*.

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

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.