THAMES YOUNG MARINERS, RIVERSIDE DR, LONDON

PRELIMINARY BAT ROOST ASSESSMENT

A Report to: Pick Everard

Report No: RT-MME-157100-04

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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	01/04/2022	Beth Stacey MSc (Ecological Project Officer) and Will Rees MSc (Senior Ecological Consultant)	Paul Roebuck MSc MCIEEM (South East Manager)	Tom Docker CEcol MCIEEM (Managing Director)

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 February 2022, Pick Everard commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at Thames Young Mariners, Richmond, London. This assessment is required to inform a planning application associated with the redevelopment of the existing site to create new accommodation and educational facilities. To fulfil the above brief to assess the potential for the existing buildings and trees on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 2nd March 2022.

An external assessment of the buildings on site identified a series of potential bat roost features. While no evidence of roosting bats was recorded during the preliminary assessment, due to the height at which these features were located, it was not possible to fully inspect all potential roosting features. Based on the information gained from the Preliminary Bat Roost Assessment, Building 1 (Main office), 2 (Wooden Cabin), 3 (Canoe Shed), 4 (Cedar House) and 5 (Residential House) have been assessed as having low potential to support roosting bats.

13 no. trees (T2, T69, T70, T71, T87, T139, T140, T141, T160, T162, T163, T247 and T248) were assessed as having high potential to support roosting bats. 6 no. trees (T93, T96, T97, T98, T249 and T250) were assessed as having moderate potential to support roosting bats. The remaining trees on site were assessed as having low or negligible potential to support roosting bats. Due to the present of overgrown scrub, it was not possible to survey the north-west portion of the site.

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

R1 **Inaccessible Area**
An inspection of the north-western corner of the site could not be undertaken due to dense scrub growth. In the event that any tree felling / works is proposed within this area, a Preliminary Bat Roost Assessment should be undertaken. This will require sensitive vegetation clearance for access.

R2 **Buildings 1, 2, 3, 4, and 5.**
Buildings 1, 2, 3, 4 and 5 were identified 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 structures. Should this survey confirm the presence of roosting bats, it will be necessary to undertake additional surveys to inform a Natural England licence application.

R3 **Trees T2, T69, T70, T71, T87, T139, T140, T141, T160, T162, T163, T247, T248.**
These trees have been identified as having high potential to support roosting bats. Proposals should be designed to retain and protect the trees as part of the proposed site re-development. If the retention and protection of the trees is unfeasible, further survey effort should be undertaken to determine the presence / absence of roosting bats within the trees. There are two possible survey options available to the client: the trees can be subject to dusk emergence and dawn re-entry surveys or the trees can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that were inaccessible during this survey; both options are detailed fully within Section 6. If a roost is discovered during these surveys, a Natural England licence application may be required.

R4 **Trees T93, T96, T97, T98, T249 and T250**
Trees T93, T96, T97, T98, T249 and T250 have been identified as having moderate potential to support roosting bats. Proposals should be designed to retain and protect the trees as part of the proposed site re-development. If the retention and protection of the trees is unfeasible, further survey effort should be undertaken to determine the presence / absence of roosting bats within the trees. The trees should be subject to dusk emergence and dawn re-entry surveys as detailed within Section 6.

R5 **Remaining trees**
The remaining trees on site were considered to have low or negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If proposed site works have not commenced within this timeframe it will be essential to update the survey effort.

R6 **Lighting**
In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

R7 **Habitat Enhancement**
In line with the National Planning Policy Framework, the development should aim to enhance the site for bats.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In February 2022, Pick Everard commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at Thames Young Mariners, Richmond, southwest London. This assessment is required to inform a planning application associated with the proposed redevelopment of the site to create new guest accommodation, staff residences and associated facilities.

In addition, Middlemarch Environmental Ltd has been commissioned to undertake the following assessments:

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

A Preliminary Ecological Appraisal has previously been undertaken by Surrey Wildlife Trust Ecology Services in November 2020 (Report 3974-1). The assessment included a Preliminary Bat Roost Assessment, the results of which are presented within Section 3. Due to the time elapsed since the assessment, an updated survey was recommended.

To fulfil the above brief to assess the potential for the existing buildings and trees on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 2nd March 2022.

All UK bat species are legally protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The development site is situated in the London Borough of Richmond, centred at National Grid Reference TQ 16397 72304. The site comprised the Thames Young Mariners Outdoor Learning Facilities with associated facilities and soft landscaping.

The central portion of the site was dominated by a large lake fed from backwater from the River Thames channel. The lake was fringed by a range of semi-natural habitats and a series of docks and pontoons. Site facilities were predominantly located within the south-western portion of the site, comprising a series of buildings, with associated storage units and hardstanding. The area to the south of the lake comprised an access road, managed amenity grassland with scattered trees and narrow bands of woodland used for amenity purposes. The north-eastern portion of the site comprises woodland habitat which forms part of a larger offsite band of woodland with reduced amenity pressure. The north-western portion of the site comprises an area of previously cleared land which has subsequently been colonised by mixed scrub habitat.

Ham Lands, a 72 ha Local Nature Reserve with broadleaf woodland, scattered scrub, meadow grassland and wetland habitats, is situated immediately north and south of the site. The River Thames is located immediately west of the site boundary. Riverside Dr. abuts at the Eastern site boundary. The broader surrounding area consists of a mixture of residential housing and parkland. St Marys University Park and Playing Grounds, comprised of scattered tree and amenity grassland, is situated approximately 700 m west. Grey Court School is situated approximately 674 m east of the site and features playing grounds with vegetated margins.

Richmond Park, a 1011.7 ha area comprised of broadleaf woodland, lowland acidic grassland and standing water habitats, is situated approximately 2.25 km east. Bushy Park, a 445 ha area of mixed woodland and grassland, is situated 1.9 km south west of the sites bounds.

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
Site Layout - 211263_220207	Pick Everard

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

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

2.2 FIELD SURVEY

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. Buildings were surveyed externally and 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 PREVIOUS BAT SURVEYS

A Preliminary Ecological Appraisal has previously been undertaken by Surrey Wildlife Trust Ecology Services in November 2020 (Report 3974-1). The assessment included a Preliminary Bat Roost Assessment.

The assessment concluded that three of the buildings on site (Report 3974-1 Ref: B1-B3) had low bat roosting potential, while a further tree within the northern portion of the site was classified as having moderate bat roosting potential (Report 3974-1 Ref: T7).

4. SURVEY RESULTS

4.1 INTRODUCTION

The Preliminary Bat Roost Assessment was conducted on 2nd March 2022 by Will Rees (Senior Ecological Consultant) and Beth Stacey (Ecological Project Officer). Drawing C157100-04-01, illustrating the layout of buildings/trees on site and location of potential roost features is provided in Chapter 7.

Weather conditions were recorded and are presented in Table 4.1.

Parameter	Conditions
Temperature (°C)	8
Cloud Cover (%)	100
Precipitation	Light rain
Wind Speed (Beaufort)	F2

Table 4.1: Weather Conditions During the Preliminary Bat Roost Assessment

4.2 SURVEY CONSTRAINTS

The north-western portion of the site was overgrown with dense scrub including bramble thickets. Consequently, a detailed inspection of this area could not be undertaken.

4.3 SURVEY RESULTS – BUILDINGS

4.3.1 Building 1 (Main Building)

External Assessment
Building 1 (Main Building) consisted of an irregular shaped single storey brick-built building (Plate 4.1). The majority of the building had a flat felt roof, though one portion of the building on the eastern extent featured a pitched roof. The entire building featured a plastic soffit/fascia board, and all windows were double glazed. Building 1 included a storage tower on the western aspect, containing the buildings heating system, as well as a residential dwelling on the south-eastern aspect. A sheltered porch area was located on the north-eastern extent of the building, below which were a set of garages (Plate 4.2).

An area of lifted roofing felt was present on the western and eastern aspects of the building (Plate 4.3 to 4.5). In addition, on the eastern aspect of the building, gaps in the soffit board were noted, which could permit entry into an enclosed space behind the soffit/fascia board (Plate 4.6, 4.7). Areas of damaged brickwork were also present on the northern extent of the building (4.8, 4.9). In addition, a bat box was present on the south-facing wall of the residential dwelling.

No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded during the survey, but it was not possible to inspect all of the features due to the height at which they were located. Therefore, it was not possible to establish if bats had used these features to enter a roost location at the time of surveying.

Plate 4.1: Building 1 (Main Building – Southern Elevation)

Plate 4.2: Western Elevation Of Building 1 (Main Building)

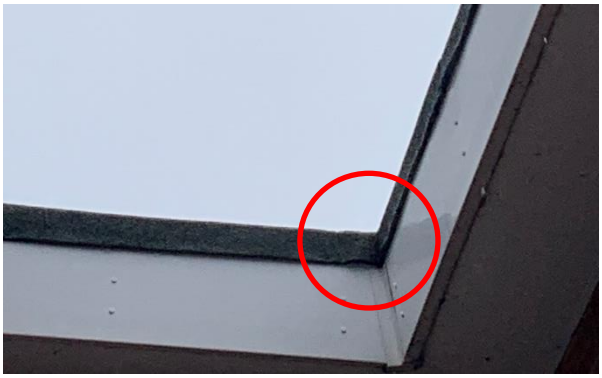


Plate 4.3: Lifted Roofing Felt (Western Aspect)

Plate 4.4: Lifted Roofing Felt (Western Aspect)

Plate 4.5: Lifted Roof Felt (Eastern Elevation)

Plate 4.6: Gap in the Soffit (Eastern Elevation)

Plate 4.7: Gap in the Soffit (Eastern Elevation)

4.8: Damaged Brickwork (Northern Elevation)

Plate 4.9: Hole in the Brickwork (Northern Elevation)

Internal Assessment
The internal space was in good condition. No enclosed roof spaces were present, and all rooms were in frequent use. No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building.

4.3.2 Building 2 (Wooden cabin)

External Assessment
Building 2 consisted of a single-storey wooden cabin, located directly north of Building 1 (Main Building) (Plate 4.10). The building had a pitched felt roof. Double glazed windows were present on the north, south and eastern aspects.

One of the wooden beams at the west-facing roof apex was damaged and presented a potential access point under the roofing felt (Plate 4.11). No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the external inspection of the building.

Plate 4.10: Building 2 (Wooden Cabin - North-Eastern Aspect)

Plate 4.11: Damage to Wooden Roof Apex (Western Aspect)

Internal Assessment
The interior of Building 2 (wooden cabin) was in good condition and in frequent use. No internal loft spaces were present. No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building.

4.3.3 Building 3 (Canoe shed)

External assessment
Building 3 consisted of a large single storey wooden shed with a pitched felt roof, used to store water sport equipment. The walls of the building comprised a mixture of wooden boarding and brickwork on top of breezeblock foundations. Two garage doors were present on the eastern and western extent of the building.

Building 3 was in generally poor condition. Much of the wooden cladding was damaged or missing, there was holes at the eaves, loose fitting joins and cracks in the brickwork (Plate 4.12-4.16). The damage observed in the wooden cladding led to an enclosed area between the wooden cladding and internal ply lining.

Plate 4.12: Missing Wooden Cladding (Southern Aspect)

Plate 4.13: Damaged Wooden Cladding (Eastern Aspect)

Plate 4.14: Damaged Brickwork (Eastern Aspect)

Plate 4.15: Loose Fitting Joins (Southern Aspect)

Plate 4.16: Gaps At The Eaves (Souuthern Aspect)

Internal assessment:
The interior of Building 3 consisted of a large open space with exposed treated timber roof beams (Plate 4.17). The building was poorly insulated with only the ceiling possessing any form of insulation. There were holes in the ceiling insulation, but none appeared to extend into significant enclosed cavities capable of supporting larger numbers of bats (Plate 4.18). No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building.

Plate 4.17: Interior of Building 3

Plate 4.18: Gap in The Ceiling Insulation

4.3.4 Building 4 (Cedar house)

External assessment
Building 4 consisted of a single storey wooden building with a pitched felt roof (Plate 4.19). The building had a series of single glazed windows with wooden frames. The building was in generally poor repair at the time of the survey. The external vents on the north-facing wall had sustained damage, granting access into the internal space (Plate 4.20). A pipe hole was also present on the east-facing wall, and appeared to extend into the wall structure (Plate 4.21)

Plate 4.19: Building 4 (Cedar House)

4.20: Damaged Roof Vent (Northern Aspect)

Plate 4.21: Pipe Hole (Northern Aspect)

Internal assessment:
No internal loft spaces were present. No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building.

4.3.5 Building 5 (Residential house)

External assessment
Building 5 (residential house) consisted of a detached single-storey house with a flat felt roof. The building was brick built, with a plastic soffit/fascia board and double-glazed windows.

Areas of lifted roofing felt were present at all aspects, presenting limited opportunities for bats to roost under the roofing material (Plate 4.22). A pipe hole was identified in the soffit box at the southern extent of the property (Plate 4.23).

Plate 4.22 Lifted Roofing Felt (Western Aspect)

Plate 4.23: Pipe Hole (Southern Aspect)

Internal assessment:
No internal loft spaces were present. No evidence of bats, e.g., droppings, urine staining, feeding remains or scratch marks, was recorded during the internal inspection of the building.

4.4 SURVEY RESULTS – TREES

4.4.1 Trees with High or Moderate Potential to Support Roosting Bats

The site featured a large number of trees of different species, ranging in age and height.

The trees considered to have high and moderate potential for use by roosting bats are further described in Table 4.2.

Tree No.	Species	Description	BCT Suitability Class
T2	*Acer psuedoplatanus*	A 12 m tall semi-mature sycamore. Loose bark was identified at 6m, and several broken branches were noted at 8m (Plate 4.24)	High
T69	*Acer psuedoplatanus*	A semi-mature 10m tall sycamore with 2 tear out wounds at 6m and one tear out wound at 8m. All features appeared to extend (Plate 4.25).	High
T70	*Acer psuedoplatanus*	A 10 m semi-mature sycamore with knot holes and a tear out wound at 5m (Plate 4.26).	High
T71	*Acer psuedoplatanus*	A 13m tall mature sycamore with tear out wounds at 6m. This feature appeared to extend (Plate 4.27).	High
T87	*Crataegus monogyna*	A mature 10 m hawthorn with a tear out wound at 6m (Plate 4.28)	High
T93	*Robinia pseudoacacia*	A mature 15 m false acacia with loose bark cavities throughout (Plate 4.29).	Moderate
T96	*Robinia pseudoacacia*	A mature 15 m false acacia with loose bark cavities throughout (Plate 4.30).	Moderate
T97	*Robinia pseudoacacia*	A mature 15 m false acacia with loose bark cavities throughout (Plate 4.31).	Moderate
T98	*Robinia pseudoacacia*	A mature 15 m false acacia with loose bark cavities throughout (Plate 4.32).	Moderate
T139	*Prunus sp.*	An 8 m tall semi-mature prunus sp. A bat box had been installed at a height of 3 m (Plate 4.33).	High
T140	*Acer pseudoplatanus*	A 10 m tall semi-mature sycamore. 2 bat boxes had been installed at a height of 4 m (Plate 4.34).	High
T141	*Acer psuedoplatanus*	A 10 m tall semi-mature sycamore. 2 bat boxes had been installed at a height of 4 m (Plate 4.35).	High
T160	*Salix sp.*	A mature 10 m salix sp with a knot hole and new growth splits at 8m (Plate 4.36).	High
T162	*Salix sp.*	A mature 5 m Salix with a large tear out wound at 3m height (Plate 4.37)	High
T163	*Salix sp.*	A mature 8 m Salix with five woodpecker holes between 4-8m (Plate 4.38).	High
T247	*Salix sp.*	An 8 m tall mature willow with a large cavity extending beyond the reach of an endoscope into the trunk at 1.5 m (Plate 4.41).	High
T248	*Acer pseudoplatanus*	A mature 20 m tall sycamore with a crack in the lower south facing limb at 3 m. Dense ivy cover was present on the trunk (Plate 4.39).	High
T249	*Acer pseudoplatanus*	A 15 m tall mature sycamore with moderate ivy cover (Plate 4.40).	Moderate
T250	*Acer pseudoplatanus*	A 15 m tall mature sycamore with moderate ivy cover (Plate 4.40).	Moderate

Table 4.2: Summary of Trees with High/Moderate Suitability for Bats Within the Survey Area

Plate 4.24: T2 With Loose Bark At 6m Height.

Plate 4.25: T69 Tear Out Wound At 6m

Plate 4.26: T70 Knot Holes At 5m.

Plate 4.27: T71 Tear Out Wounds At 6m

Plate 4.28: Hawthorn with Tear Out Wound.

Plate 4.29: T93 Loose Bark.

Plate 4.30: T96 Loose Bark.

Plate 4.31: T97 Loose Bark

Plate 4.32: T98 Loose Bark.

Plate 4.33: T139 With A Bat Box.

Plate 4.34: T140 Bat Boxes At 4m.

Plate 4.35: T141 Bat Boxes At 4m.

Plate 4.36: T160 Knot Hole At 6m.

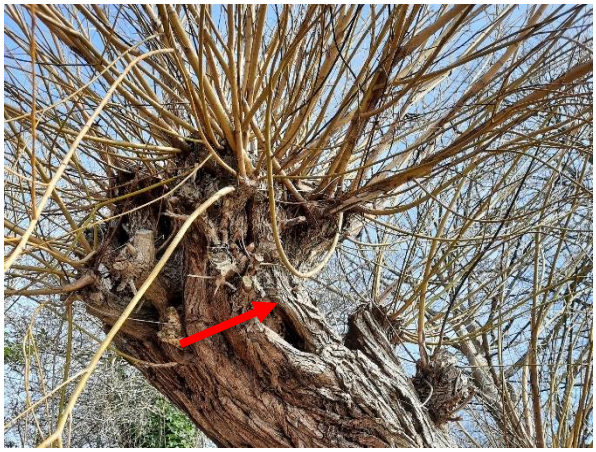


Plate 4.37: T161 With Tear-Out Wound.

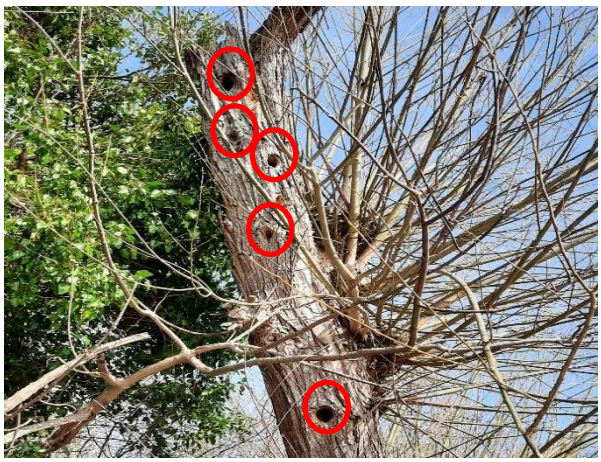


Plate 4.38: T163 With Five Woodpecker Holes.

Plate 4.39: T248 Branch Split At 3m.

Plate 4.40. T249 And 250 Dense Ivy Cover

Plate 4.41. T247 Cavity within trunk

4.4.2 Trees with Low or Negligible Potential to Support Roosting Bats

All other trees on site were deemed to have low/negligible potential to support roosting bats.

4.5 SITE AND SURROUNDING HABITATS

The central portion of the site was dominated by a large lake fed from backwater from the River Thames channel. The lake was fringed by a range of semi-natural habitats and a series of docks and pontoons. Scattered trees, narrow bands of woodland and scrub were present along the site boundaries. The lake and associated semi-natural habitat along site boundaries are considered to offer high value foraging and commuting habitat for bats. The lake, in particular, is likely to represent a significant and important foraging resource for local bat populations.

Site facilities were predominantly located within the south-western portion of the site, comprising a series of buildings, with associated storage units, introduced shrubs, managed amenity grassland and hardstanding. These areas of the site are considered to only offer limited value to foraging and commuting bats. Security lighting is present within these areas of the site.

The River Thames, situated immediately west of the site, provides bats with a commuting corridor as well as foraging opportunities. Ham Lands, a local nature reserve featuring broadleaf woodland, meadow grassland and standing water habitats, abuts north and south of the site and provides bats foraging, commuting and roosting opportunities. The residential gardens situated east of the site provide some commuting and foraging opportunities, but the presence of contra-indicators, such as street/security lighting, may discourage bats from utilising such habitats.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF PROPOSALS

The proposed works intend to demolish the existing buildings and erect a series of buildings to provide new guest accommodation and associated facilities. The majority of the works will take place within the existing building footprints however, small areas of amenity grassland and introduced shrub habitat are likely to be lost. In addition, it is proposed to build a further three buildings, two eastwards, providing staff accommodation, and one south-westward – providing glamping and learning facilities.

5.2 ASSESSMENT OF BUILDINGS

The Preliminary Bat Roost Assessment has identified a series of potential features, which could be utilised by roosting bats within buildings on site. However, many of these features could not be fully inspected due to their height. Therefore, whilst no evidence of bats or bat activity was found during the survey, as many features were not fully inspected, it cannot be determined whether bats were utilising the buildings at the time of the survey.

It was concluded that Building 1 (Main Building), 2 (Wooden Cabin), 3 (Canoe shed), 4 (Cedar House) and 5 (Residential House) have low potential to support roosting bats. Potential roost features recorded included:

- Lifted roofing felt;
- Damaged brickwork;
- Damaged wooden cladding;
- Loose fitting joins;
- Gaps at the eaves; and,
- Pipe holes.

The potential roost features identified in these buildings may provide suitable habitat for a small number of bats to use opportunistically but are considered unlikely to be used by larger number of bats on a regular basis or a significant roost.

5.3 ASSESSMENT OF TREES

The Preliminary Bat Roost Assessment has identified several potential features which could be utilised by roosting bats in several of the trees on site. However, many of these features could not be fully inspected due to their height. Therefore, whilst no evidence of bats or bat activity was found during the survey, as many features were not fully inspected, it cannot be determined whether bats were utilising the trees at the time of the survey.

13 no. trees (T2, T69, T70, T71, T87, T139, T140, T141, T160, T162, T163 , T247 and T248) were assessed as having high potential to support roosting bats. 6 no. trees (T93, T96, T97, T98, T249 and T250) were assessed as having moderate potential to support roosting bats.
Numerous potential features were found in the trees assessed as having high/moderate potential to support roosting bats, including:

- Loose bark;
- Knot holes;
- Tear outs;
- Dense ivy; and,
- Deadwood cavities.

The remaining trees on site lacked any potential roost features likely to support bats or were generally of insufficient size and age to support roosting features and were therefore assessed as having low/negligible potential to support roosting bats.

5.4 POTENTIAL IMPACTS ON BATS

The buildings on site are proposed for demolition. The structures have been classified as having low bat roosting potential and as such are only considered likely to support a roost of low conservation significance.

Should bats be found to be using any of the buildings/ on site as roosting habitat, there is the potential for direct harm/disturbance to these bats during the works which would constitute a breach of legislation. Thus, further survey work is required to determine the presence/absence of roosting bats.
A series of trees across the site present features with high and moderate bat roosting potential. Proposals should be designed to retain and protect the trees wherever feasible. If retention is not possible, further survey work is required to determine the presence/absence of roosting bats.

Proposals should be designed to retain and protect the high value habitats on site, including the lake, scattered tree, woodland and scrub habitat.

The site itself provides high quality habitat for foraging and commuting bats and is well connected to a broader network of habitats. Any increase in artificial lighting on the lake, scattered tree, scrub and woodland and over site's boundaries may significantly impact the viability of this habitat for nocturnal species, including bats.

The proposed development should seek to enhance the value of the site for bats. Built in bat boxes should be integrated within the new buildings and habitats should be provided which will attract night flying insects. Enhancement opportunities include the provision of linear wildflower grassland margins around the existing intensively managed amenity grassland. The habitat will serve as a semi-natural buffer for the woodland habitat and provide a linear commuting and foraging habitat.

Recommendations regarding lighting, habitat enhancement and additional surveys have been made in Chapter 6.

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 Inaccessible Area

An inspection of the north-western corner of the site could not be undertaken due to dense scrub growth. In the event that any tree felling / works is proposed within this area, a Preliminary Bat Roost Assessment should be undertaken. This will require sensitive vegetation clearance to provide access.

R2 Buildings 1, 2, 3, 4, and 5.

Buildings 1, 2, 3, 4 and 5 were identified 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 structures. 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 Trees T2, T69, T70, T71, T87, T93, T96, T97, T98, T139, T140, T141, T160, T162, T163, T247, T248.

These trees have been identified as having high potential to support roosting bats. Proposals should be designed to retain and protect the trees as part of the proposed site re-development. If the retention and protection of the trees is unfeasible, further survey effort should be undertaken to determine the presence / absence of roosting bats within the trees.

There are two possible survey options available to the client: the trees can be subject to dusk emergence and dawn re-entry surveys or the tree/s can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that were inaccessible during this survey; both options are detailed further below. If a roost is discovered during these surveys, a Natural England licence application may be required.

Option 1: Dusk Emergence and Dawn Re-Entry Surveys

Bat Survey: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for trees with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat activity season to determine the presence/ absence of roosting bats within the tree/s. The bat activity season extends from May to September. At least one of the surveys should be a dawn re-entry survey, and at least two of the surveys should be undertaken between mid-May and August.

Option 2: Preliminary Roost Feature Inspection Survey

Where safe to do so, trees will be climbed utilising tree climbing equipment. Any PRF will be internally searched using a torch and endoscope. If the feature on further inspection is found to be unsuitable for bats, then the status of the tree will be downgraded to low or negligible bat potential. If a roost is identified, if PRF extend beyond the reach of an endoscope, or if the PRF shows any signs of use by fauna, dusk emergence and dawn re-entry surveys will be required (as detailed in Option 1). If any trees are considered unsafe to climb, or cannot be fully inspected for safety reasons, then they should be subject to dusk emergence and dawn re-entry surveys, as detailed in Option 1.

R4 Trees T249 and T250

T249 and T250 have been identified as having moderate potential to support roosting bats. Proposals should be designed to retain and protect the trees as part of the proposed site re-development. If the retention and protection of the trees is unfeasible, further survey effort should be undertaken to determine the presence / absence of roosting bats within the trees.

Bat Survey: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) recommends that for trees with moderate bat roosting potential at least two dusk emergence and/or dawn re-entry surveys be undertaken during the bat activity season to determine the presence/ absence of roosting bats within the tree/s. The bat activity season extends from May to September. At least one of the surveys should be a dawn re-entry survey, and be undertaken between mid-May and August.

R5 Remaining trees

The remaining trees on site were considered to have low or negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If proposed site works have not commenced within this timeframe it will be essential to update the survey effort to establish if the trees have developed features that could be used by roosting bats in the interim. In the unlikely event that a bat is found during works to the trees all works must immediately cease and a suitably qualified ecologist should be contacted.

R6 Lighting

In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), 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:

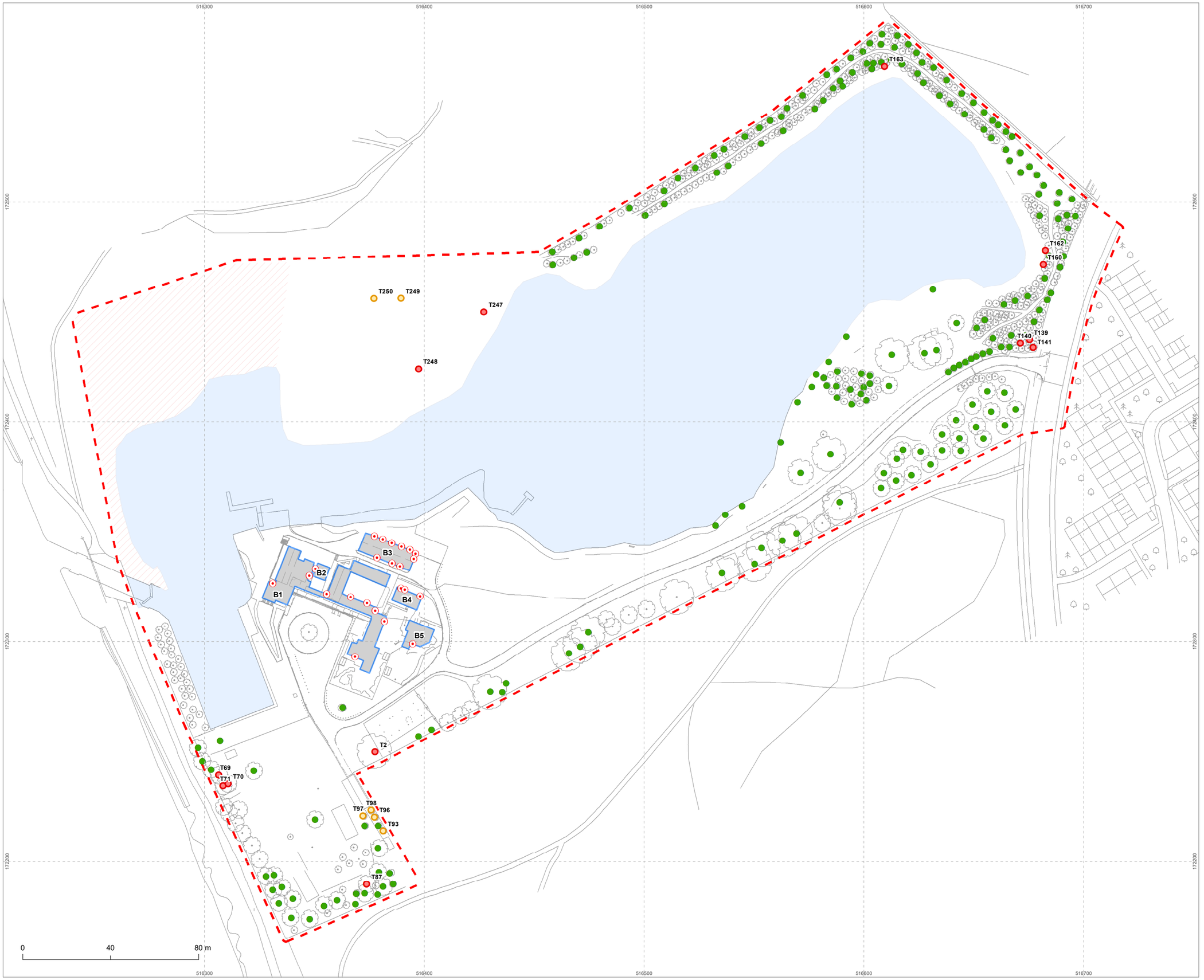
- Avoiding the installation of new lighting in proximity to key ecological features, such as hedgerows and woodland edges.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. 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.

R7 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. The planting of species which attract night flying insects is encouraged as this will be of value to foraging bats, for example: evening primrose *Oenothera biennis*, honeysuckle *Lonicera periclymenum* and fleabane *Pulicaria dysenterica*.

7. DRAWINGS

Drawing C157100-04-01 – Preliminary Bat Roost Assessment



C157100-04-01

Legend

- Site boundary
- No access
- Standing water
- Building with low bat roost potential
- Tree with high bat roost potential
- Tree with moderate bat roost potential
- Tree with low/negligible bat roost potential
- Potential bat roosting feature

N

Project	Thames Young Mariners, Richmond, London
Drawing	Preliminary Roost Assessment
Client	Pick Everard
Drawing Number: C157100-04-01	Revision: 00
Scale @ A3: 1:1,600	Date: March 2022
Approved By: WR	Drawn By: VO

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APPENDIX 1

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.

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.