

Preliminary Ground Level Bat Roost Assessment of Trees

Horiba MIRA, Watling Street, Nuneaton

A Report To: Horiba Mira Ltd
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Quality Assurance

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of Practice for Planning and Development”. The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

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Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.

Non-Technical Summary

Project Background

In February 2023, Horiba Mira Ltd commissioned Middlemarch to undertake a Preliminary Ground Level Bat Roost Assessment of Trees at Horiba MIRA, Watling Street, Nuneaton in Warwickshire. This assessment is required to inform vegetation clearance works ahead of a planning application to extend an existing building on site.

Scope of Survey

To fulfil the above brief to assess the potential for the existing trees on site to support roosting bats, a Preliminary Ground Level Bat Roost Assessment of Trees was undertaken on 17th and 22nd February 2023.

Summary of Key Bat Features

Roosting: The two trees located along the ditch were classed as having low potential.

Foraging/Commuting: The grassland, hedgerow and scrub on site provided suitable, albeit rather limited, habitat for foraging and commuting bats due to the likely influence of artificial illumination and limited connectivity to the south given the presence of the A5. Nevertheless, the hedgerows are connected to suitable habitat to the north and provide suitable opportunities, primarily for foraging.

Potential Impacts on Bats

No impacts on roosting bats are anticipated due to the lack of potential roosting features observed within the trees on site.

The vegetative features on site provide suitable foraging and commuting habitat for bats, though given the location and extent of these habitats, it is not considered that impacts associated with the proposed development would cause significant levels of associated habitat loss or fragmentation.

Recommendations

- **Trees:** The two trees subject to survey were considered to have low potential for roosting bats. No further surveys were therefore required, and vegetation removal works were completed at the end of February 2023 to avoid bird nesting season. Both trees have now been removed.

Full details of the recommendations are provided in Chapter 5.

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1. Introduction

1.1 Project Background

In February 2023, Horiba Mira Ltd commissioned Middlemarch to undertake a Preliminary Ground Level Bat Roost Assessment of Trees at Horiba MIRA, Watling Street, Nuneaton in Warwickshire. This assessment is required to identify any constraints ahead of vegetation clearance associated with an upcoming planning application.

To fulfil the above brief to assess the potential for the existing trees on site to support roosting bats, a Preliminary Ground Level Bat Roost Assessment of Trees was undertaken on 17th and 22nd February 2023.

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.

1.2 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Location	Horiba MIRA, Watling Street, Nuneaton
National Grid Reference	SP 3620 9537
Site Area (ha)	0.2
Topography	Predominantly flat
Land Cover (on site)	The site was dominated by rough neutral grassland. The western extent of the survey area comprised arable farmland and an intact hedgerow formed the boundary between the arable and neutral grassland fields. A ditch corridor ran along the eastern boundary which possessed associated scrub and scattered trees.
Land Cover (site surrounds)	The wider landscape is dominated by farmland with pockets of woodland and scattered waterbodies. The Horiba MIRA site extends to the west and north-west. The A5 runs to the south.

Table 1.1: Summary of Site and Surroundings

1.3 Previous Bat Surveys

Middlemarch have carried out ecological surveys at Horiba Mira in association with a range of different projects previously. These surveys have included bat surveys, most recently carried out at land located to the north during 2021 and 2022. During these surveys, commuting and foraging behaviour by five species of bats was recorded comprising the following species: noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, and brown long-eared bat *Plecotus auritus*. Day roosts of common pipistrelle, soprano pipistrelle and brown long-eared are also known to be present within the surrounding area.

2. Methods

2.1 Field Survey

A Preliminary Ground Level Bat Roost Assessment of the trees was carried out on site in line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004)¹ and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)². The assessment was conducted on 17th and 22nd February 2023 by Helen Griffin ACIEEM (Principal Ecological Consultant and licensed bat worker under Class 18) and Carol Flaxman ACIEEM (Principal Ecological Consultant). Weather conditions were recorded and are presented in Table 2.1.

Parameter	17/02/2023	22/02/2023
Temperature (°C)	6	7
Cloud (%)	100	100
Wind (Beaufort)	F1	F0
Precipitation	Nil	Light drizzle

Table 2.1: Weather Conditions During Field Survey

A visual assessment was conducted during daylight hours of the trees 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 bats. Please refer to Appendix 2 for a list of example PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence.

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)², as detailed in Table 2.2.

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)² recommend no further survey work is required for these tree classes.

Suitability	Description
High	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.

Table 2.2: Classification of Trees with Bat Potential (Adapted from Collins, 2016)² (continues)

¹ English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

² Collins, J. (ed). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.)*. The Bat Conservation Trust, London.

Suitability	Description
Moderate	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 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 (cont.): Classification of Trees with Bat Potential (Adapted from Collins, 2016)²

2.2 Constraints

No significant constraints were encountered during the assessment.

3. Survey Results

3.1 Trees with Low or Negligible Potential to Support Roosting Bats

Two trees were located within the survey area. These comprised mature standards of oak *Quercus robur*, approximately 12 – 15 m in height. Areas of deadwood and rot were observed within the canopies. When inspected with a torch and binoculars, these were found not to extend into any suitable cavities. Some minor splits and twisted branches were noted at lower levels, though these were upward facing and exposed to rain ingress. The southern-most of the two trees possessed a 10 cm diameter hole on the southern aspect of the main trunk. This feature was inspected with a torch and was found to extend into a very shallow cavity, approximately 5 cm deep, which was filled with dense cobwebs and debris. No evidence of bats was observed during the assessment.

Following assessment, both trees were classed as having low bat roosting potential.

3.2 Site and Surrounding Habitats

The habitats on site, namely the trees, ditch and scrub provide some, albeit rather limited, foraging habitat for bats due to the potential for artificial illumination spilling onto these features from the existing site boundary. However, the site is set more widely within farmland with scattered woodland, grassland, ponds and hedgerows which provide suitable opportunities for foraging and commuting in the wider landscape.

Habitats within 1 km of the site suitable for roosting, commuting and foraging include:

- Residential houses and associated gardens;
- Farmhouses and associated agricultural buildings;
- Standing waterbodies;
- Pockets of woodland;
- Agricultural fields with tree and hedge lined boundaries; and,
- Disused railway line with associated vegetated corridor.

4. Impact Assessment

4.1 Summary of Proposals

This survey was required ahead of a proposed building extension. Associated vegetation clearance is proposed imminently in order to remove suitable vegetation ahead of bird nesting season. It is understood that vegetation along the ditch corridor, including two trees. These trees form the focus of this assessment.

4.2 Summary of Key Bat Features

The trees provided a low number of shallow features which were exposed to the elements and provided very limited opportunities for roosting. No evidence of bats was identified on site during the assessment.

4.3 Potential Impacts on Bats

No impacts on roosting bats are anticipated due to the lack of potential roosting features observed within trees on site.

The site provides suitable foraging and commuting habitat for bats, though the ditch corridor is likely to be subject to some level of existing artificial illumination from adjacent buildings. Given the location and extent of these habitats, and location of the A5 to the south, it is not considered likely that these features comprise key areas of habitat for foraging or connectivity for bats. The local areas of vegetation loss are therefore not considered likely to cause significant levels of associated habitat loss or fragmentation; however, consideration should be made regarding how to limit any associated impacts as much as possible. A recommendation regarding sensitive use of lighting is made in Chapter 5.

5. Recommendations

All recommendations provided in this section are based on Middlemarch's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

- R1 Trees:** The two trees subject to survey were considered to have low potential for roosting bats. No further surveys were therefore required, and vegetation removal works were completed at the end of February 2023 to avoid bird nesting season. Both trees have now been removed.
- R2: Lighting:** In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018³; Gunnell et al, 2012⁴), any new or temporary 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.
 - 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.

³ Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals.

⁴ Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.

Appendix 1

Relevant Legislation

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

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

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

Appendix 2

Examples of Potential Roost Features

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.

Potential Roost Features (Adapted from Collins, 2016)²