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**Mr and Mrs Matthews**

**Bat Surveys**

**Riddings Farm**


**Moisty Lane, Marchington, Uttoxeter, ST14 8JY**

**Project number 556**

**Version 2**


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South and South East

 0330 2233 806

 southeast@primeenvironment.co.uk

Midlands and North

 0330 2233 825

 central@primeenvironment.co.uk

## Profile

Prime Environment was established in 2014 to provide environmental support to businesses.

We specialise in development projects across a range of sectors including education, health, residential, care, minerals, transport and energy.

Our two offices in Derbyshire and Cambridgeshire and network of associates allow us to lead projects across the UK.

We deliver surveys, reports, licences and mitigation for projects ranging in size from single dwelling to multi-phase, mixed use developments.

The principal disciplines in which we work are ecology and arboriculture.

To discuss how we can help you with your project, contact us on:

### Midlands and North

central@primeenvironment.co.uk  
Tel: 0330 2233825

### South and South East

southeast@primeenvironment.co.uk  
Tel: 0330 2233806



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## 1 Introduction

### 1.1 Terms of Reference

In April 2019, Prime Environment Limited (Prime Environment) was instructed by Mr and Mrs Matthews (the Client) to undertake a Bat Surveys of Riddings Farm, Moisty Lane, Uttoxeter, (Ordnance Survey (OS) grid Reference SK 12366 31317) (The Site).

Information for the assessment was obtained from:

- Preliminary Roost Assessment (PRA)
- Two dusk emergence surveys
- PRA, dusk and pre-dawn surveys completed in 2014 and 2015 by Staffordshire Ecological Services

The Site is a single barn within a small complex of former farm buildings. The barn has previously been extended with a flat roof, insulation and mezzanine level. The Site is on a valley ridge overlooking pasture fields and the River Dove.

The proposals are to complete renovation of the building into a residential house.

### 1.2 Aims and Objectives

The aims of the study were to:

- Identify, describe and assess the value of any sensitive ecological receptors at the Site and the immediate surrounding area
- Identify potential ecological impacts of development and suggest appropriate building constraints, outline mitigation and compensation measures
- Identify any legal and policy implications of any anticipated ecological impacts (Information on relevant legislation is presented in Appendix 1)
- Make recommendations for any necessary further survey work or licensing, as required.

## 2 Methodology

### 2.1 Personnel

The survey was led and reported by Jo Pedder.

Relevant staff CVs are provided in Appendix 3.

### 2.2 Preliminary Roost Assessment

The Preliminary Roost Assessment (PRA) followed the Bat Conservation Trust (BCT) guidelines criteria<sup>1</sup> (see Appendix 1). This entails inspecting a structure (e.g. a building or tree) for field evidence of roosting bats such as feeding remains, droppings, urine staining and Potential Roosting Features (PRFs) such as voids, cracks and crevices.

Any direct evidence, type and number of PRFs and the Site's environment is then used to grade the structure's suitability for bats. The assessment is based on the potential value of a roost in the structure, not the likelihood of a bat roost at the structure. A low suitability structure would, at most, have features that individual bats could roost in opportunistically. Structures with a moderate suitability may support bats regularly, but are not likely to include hibernation or maternity roosts. A high suitability structure would have one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis.

The PRA was undertaken on 16 April 2019. The PRA was limited to Building A.

### 2.3 Dusk Emergence Surveys

Two dusk emergence surveys were undertaken on 21/05/2019 and 06/06/2019. The surveys followed the Bat Conservation Trust (BCT) guidelines for roost presence / likely absence surveys.

The dusk survey began 15 minutes before sunset and continued for 1.5 hours after. The surveyors observed the building for emerging/returning bats and used an ultrasonic bat detector to transcribe, listen to and record their echolocation calls. Call characteristics, such as pitch and repetition rate are diagnostic for species, or groups of species. Using a combination of visual observations and the echolocation calls, bats were identified to species or groups in the field and the calls were further analysed using sonogram software after the survey.

### 2.4 Survey Constraints

Any ecology assessment must be considered as a 'snapshot' of the site conditions at the time of the survey. Ecological constraints will change over time and therefore the findings of this report are considered to be valid for a period of one year, after which the report should be reviewed to assess whether the survey should be updated.

The dusk emergence surveys deviated from best practice in that two dusk surveys were used instead of one dusk and one pre-dawn survey. The PRA had ruled out a roost of late emerging bats, such as long-eared bats or Natterer's bats, and good views of the building could be

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<sup>1</sup> Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn). The Bat Conservation Trust, London.  
<sup>2</sup> Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (2<sup>nd</sup> edn). Bat Conservation Trust, London.

achieved at dusk. Dusk surveys were considered more appropriate for this building. Using professional opinion to deviate from the guidance is supported and recommended by BCT.

No constraints were such that they affect the overall conclusions and recommendations made herein.

### 3 Results

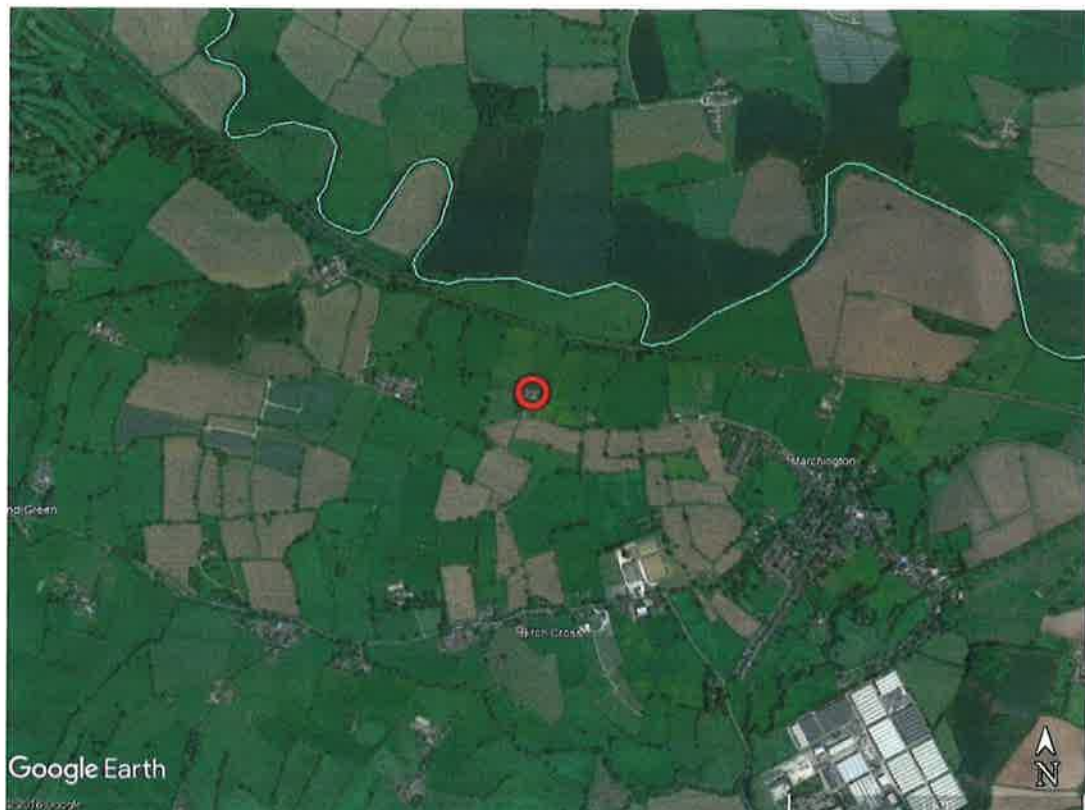
#### 3.1 Surrounding Area

The Site is in the Needwood and South Derbyshire Claylands National Character Area (NCA). The NCA is divided by the River Dove's wide flood plain. Plantations, ancient woodlands, hedgerows, pastoral land, mixed farming, internationally important wetlands and villages and other settlements comprise this rolling plateau.

The Site is situated on a shallow ridge overlooking the Dove. Habitats within 500 m include arable and pasture fields, hedgerows, farm buildings, a rail line and the river.

Figure 1, an aerial photograph of the Site, shows the Site in context with the surrounding landscape.

**Figure 1 – Site Location**





### 3.2 Site's Habitats

The Site includes a single building – Building A. This is a single storey former barn. The Site is presented in Figure 2 and described in Table 1.

### 3.3 Prior Surveys

Surveys for bats were undertaken in 2014 and 2015 to support a previous application at the Site. The original SES report can be made available to read in full. In summary, Building A was lived in unofficially until relatively recently prior to the 2014 survey. When it was abandoned in approximately 2012, the doors and windows were left open.

During the initial PRA, evidence of bats was found in Building A in the form of droppings and feeding remains. DNA analysis of the droppings found them to be those of brown long-eared bats.

Bat presence / absence surveys consisting of 3 dusk emergence surveys, 3 internal inspections and 8 nights remote monitoring were carried out during May 2015. The presence / absence surveys did not find any evidence of bats roosting in Building A.

General bat activity was limited to moderate foraging activity by low numbers of common and soprano pipistrelle bats. It is concluded that the evidence of bat presence found in Building A during the PRA was a result of brown long-eared bats entering the building to forage, probably taking advantage of doors and windows which were left open when the building was previously abandoned. The large number of tortoiseshell butterflies observed roosting in the building are typical prey for brown long-eared bats. The survey effort applied was considered sufficient to conclude the likely absence of bat roosts from the building.

**Figure 2 – Site Layout**



**Table 1 –PRA Result**

Building / Tree Name (Reference)	Description	Potential Roosting Features / Evidence of Bats	Bat Roost Suitability
Building A	<p>A single-storey brick building which has been extended and partially converted.</p> <p>The main roof is pitched and tiled with clay peg-tiles. The front (south) aspect of the roof is in good condition, but the rear section is damaged.</p> <p>There are no fascia or barge boards.</p> <p>The western section has a flat roof with corrugated sheet material and a plastic fascia.</p> <p>The eastern section is a small lean-to type roof covering a coal store and bathroom. Internally, a mezzanine level has been created in the building and the roof plaster</p>	<p>There are gaps under tiles (particularly at the rear), at ridge tiles and under the flat roof which could provide access for bats into a crevice to roost.</p> <p>A few tortoiseshell wings were recorded on the floor, but these appeared to be quite old.</p> <p>Two old bat droppings were also recorded – one on a windowsill by a broken window and one on the toilet cistern. Aging bat droppings is difficult, but we consider that these are at least a year old.</p>	<p>Moderate potential for crevice dwelling bats.</p> <p>If a void roosting species, such as brown long-eared bats roosted in the building we would have expected to find substantial, recent, evidence of them within the building..</p>

No roosting bats were recorded during either dusk emergence survey. On the first visit very few bats were recorded. Those which did pass the Site were common pipistrelle bats passing quickly. The second visit recorded a higher number of bat passes – up to three individual common

pipistrelle were present circling the farm buildings and neighbouring garden during the survey. Several distant noctule passes were also recorded.

**The survey conclusion is that there are no active bat roosts at the Site.**

## 4 Assessment

### 4.1 Project Proposals

\* The proposals are to demolish the flat roofed extension and build a two-storey extension. The existing pitched roof will be re-roofed and velux roof lights installed.

### 4.2 Further Assessment Required

No further surveys are required to complete this assessment.

### 4.3 Ecological Constraints

There are no outstanding constraints to the proposed development with regard to bats.

### 4.4 Ecological Opportunities

In accordance with the National Planning Policy Framework (NPPF) and the 25-year environmental plan all new developments should aim to achieve a net gain in biodiversity. It is recommended that two bat-boxes are included within the walls of the extension. An example of suitable boxes are presented in Appendix 4.

### 4.5 Conclusion and Summary of Actions

Table 2 – Summary of Actions

Requirement	Action
Planning Stage	
None.	N/A
Pre-construction	
Bats	Plan to include bat boxes within the new extension
Construction	
Bats	Implement the above.

\* MR PEDDER looked up the wrong planning Number.  
The renewal of planning is for the previously agreed plans which do not involve demolishing the single storey extension just changing the roof on the extension from a flat roof to a ridge roof (to match original barn).  
The extension to remain single storey.

## Appendix 1 Legislation, Policy and Best Practice

### Legislation

There are many active pieces of legislation which are aimed at protecting wildlife and habitats within the UK. These are summarised in Table 3.

**Table 3 - Summary of Primary Legislation in the UK**

Legislation	Description
The Wildlife and Countryside Act (WCA) 1981	<p>The WCA is the primary piece of legislation relating to nature conservation in Great Britain. The Act is supplemented by provisions in the CRoW Act 2000 and the NERC Act 2006. It provides for the notification and confirmation of Sites of Special Scientific Interest by Natural England. It also sets out, in schedules, important and invasive species which are legally protected or require active management.</p> <p>The WCA consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain (NB Council Directive 79/409/EEC has now been replaced by Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version)).</p>
The Conservation of Habitats and Species Regulations 2017	<p>The Conservation of Habitats and Species Regulations 2017 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017, and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters).</p>
The Countryside and Rights of Way (CRoW) Act 2000	<p>The CRoW applies to England and Wales only, received Royal Assent on 30 November 2000, with the provisions it contains being brought into force in incremental steps over subsequent years. Containing five Parts and 16 Schedules, the Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.</p>
Natural Environment & Rural Communities (NERC) Act 2006	<p>The NERC places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.</p> <p>The NERC Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list replaces the UK Biodiversity Action Plans (UKBAP) and has been drawn up in consultation with Natural England, as required by the Act.</p> <p>The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions.</p> <p>Fifty-six habitats of principal importance (HPI) are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. Of most</p>

relevance to the Site, they include ponds, open mosaic habitats on previously developed land and lowland heathland.

There are 943 species of principal importance (SPI) included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

## Protected Species

### Bats

All species of bat in Britain are 'European Protected Species' (EPS) and are protected under the Conservation of Habitats and Species Regulations 2010, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000. These pieces of legislation combine to give substantial protection to EPS and their habitats, making it an offence to:

- Deliberately capture, injure or kill a bat.
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time).
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

The Natural Environment & Rural Communities (NERC) Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

## Policy

### National Planning Policy Framework (NPPF) (2018)

Chapter 15 of the National Planning Policy Framework (NPPF) aims at conserving and enhancing the natural environment and states that planning policies and decision should contribute to and enhance the natural and local environment. In terms of biodiversity this should be achieved by:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils
- recognising the intrinsic character and beauty of the countryside, and wider benefits from natural capital and ecosystem services
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures

The NPPF states that to protect and enhanced biodiversity, [local] plans should:

- identify and safeguard components of wildlife-rich habitats and wider ecological networks
- promote the conservation and enhancement of priority habitats and ecological networks and the protection and recovery of priority species

The NPPF states that when determining planning applications, local planning authorities should refuse applications which:

- cause significant harm to biodiversity which can not be avoided, adequately mitigated or as a last resort, compensated for
- plan to develop on land within or outside of a Site of Special Scientific Interest (SSSI) and which is likely to have an adverse effect on it (either individually or in combination with other developments)
- result in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and where a suitable compensation strategy exists

The local planning authority should support developments whose primary objective is to conserve or enhance biodiversity, especially where this can secure measurable net gains in biodiversity.

### HM Government – 25 Year Environment Plan

The 25-year plan to improve the environment sets out what the government intends to do to increase biodiversity, reduce climate change and secure ecosystem services. It aims to deliver cleaner air and water, protect threatened species and provide richer wildlife habitats.

## Guidance

### BCT Roost Assessment Criteria

Suitability	Description of Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>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).</p> <p>A tree of sufficient size and age to contain PRFs but none seen from the ground or features seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by another habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Moderate	A structure or 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 <sup>3</sup> .	<p>Continuous habitat connected with the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	<p>A structure or 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.</p> <p>A structure or 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.</p>	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>

<sup>3</sup> 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.



## Appendix 2 Staff Summaries

### Jo Pedder – Director

Jo Pedder BSc. hons MCIEEM is director of Prime Environment Ltd. He is an ecologist with over 15 years' experience in the environmental consulting sector. Jo holds survey licences for bats (level 2) and great crested newts (level 1) and development licences for bats and newts. Jo oversees many of Prime's projects from barn conversions to sites over 300 ha and has a range of experience in the minerals, housing and energy sectors.

## Appendix 3 Photos



Front of building



Rear of building



Flat roof section



Gap at ridge tile.



Loose tiles



Broken windows



Mezanine level

## Appendix 4 Enhancement

### Schwegler Bat Tube

The 1FR Bat Tube is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. It can also be painted to match your building with an air permeable paint if desired.

Comprised of Woodcrete with integrated wooden panel.

Dimensions: 200mm wide x 470mm high x 120 mm deep

Entrance Dimensions: 150 x 90 x 20 mm

Weight: Approximately 9.8 kg



Photo courtesy of Schwegler

### Habibat Integrated Bat Box

These boxes can be built into the walls of new buildings to create purpose-built crevices for bats.

Facing products include:

- Brick
- Stone
- Granite
- Masonry
- Slate
- Terracotta
- Tile
- Timber



Photo courtesy of Habibat

Dimensions: 215 mm wide x 440 mm high x 102 mm deep

Weight: Approximately 7 kg

### Schwegler 1FQ Bat Box

These type of bat boxes can be attached to external walls to create crevices for bats. This box does not require maintenance or cleaning.

Comprised of wood-crete with a cork back panel.

Dimensions: 350 mm wide x 600 mm high x 90 mm deep

Weight: Approximately 16 kg



Photo courtesy of Schwegler

## Wildcare Soffit Bat Box

These type of bat box utilises space behind standard soffit boxes. It can be cut to length and is slotted into the soffit box creating an enclosed space for roosting bats.

Comprised of FSC hardwood exterior plywood

Dimensions:

- Entrance slot 20 mm
- Standard length 330 mm



Photo courtesy of Wildcare

## Prime Environment

Company Number: 08407111

1 Barley Suite  
Glebe Farm Campus  
Bourne Road  
Knapwell  
Cambridgeshire  
CB23 4GG

### For the Midlands and North

[central@primeenvironment.co.uk](mailto:central@primeenvironment.co.uk)

Tel: 0330 2233825

### For the South and South East

[southeast@primeenvironment.co.uk](mailto:southeast@primeenvironment.co.uk)

Tel: 0330 2233806

