DEVELOPMENT
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Bat survey of Pear Tree Farm, Ratby, Leicestershire

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NON-TECHNICAL SUMMARY

A series of two, 'Dutch barns' and a farmhouse were subject to a bat survey by Tim Palmer MIEEM (English Nature licensed bat worker) and Jim Flanagan of Andrew McCarthy Associates on 13 June 2007.

Surveys carried out included a visual inspection of the internal and external building surfaces for the presence of bat droppings as well as an evening and dawn survey using ultrasound bat detectors.

No accumulations of droppings were recorded in any of the buildings and the buildings were assessed as having negligible potential to support roosting bats. Two fairly recent bat droppings were found on building material stored inside one of the Dutch barns suggesting that they were occasionally visited by foraging bats. During the evening emergence survey nine common pipistrelle bats were observed flying through the site in a westerly direction and foraging intermittently inside the open barns. Surveys at dawn recorded up to 17 common pipistrelle bats flying through the site in a easterly direction presumably returning to a substantial off-site roost elsewhere in the village. No bat evidence was recorded from the farmhouse and no bats were seen emerging from or returning to roost within the building.

The potential of the buildings on site to support roosting bats is assessed as being negligible – low. The open fronted barns are well lit and exposed, with concrete block walls beneath corrugated steel or crysotile roofs, offering limited roost features to niche or open roosting bat species. The farmhouse has a well sealed slate roof with close fitting fascia boards and no obvious means for bats to gain access to internal loft voids or wall cavities.

No bat roosts were recorded during the survey and no further surveys are recommended due to the limited potential of the available roosting habitat on site. It is anticipated that the commuting bats observed during evening and dawn surveys will not be adversely affected by the proposed development of the site to housing, and the inclusion of five integrated woodcrete or wooden bat boxes, as proposed in this report, would substantially enhance the viability of the site for roosting bats.

CONTENTS

NON-TECHNICAL SUMMARY 2
1. INTRODUCTION 4
2. LEGISLATION 5
3. METHODOLOGY 6
4. BUILDING ASSESSMENT 7
5. RESULTS 9
6. DISCUSSION AND RECOMMENDATIONS 10

1. INTRODUCTION

1.1 Andrew McCarthy Associates were commissioned by Cawrey Ltd to undertake a survey of a series of farm buildings at Pear Tree Farm, Ratby, Leicestershire (central grid reference SK 510 057). The survey is required to support a planning application to re-develop the site, to determine the use of the buildings and surrounding land by bats, and to provide advice regarding the continuation of the project.

2. LEGISLATION

2.1 In England, Scotland & Wales, all species of bat are fully protected under the Wildlife & Countryside Act 1981 and as amended, including amendments in the Countryside and Rights of Way Act 2000. They are also included on Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 1994. Taken together, this legislation makes it illegal to:

- intentionally or recklessly kill, injure or capture a bat;
- intentionally, deliberately or recklessly disturb bats;
- Intentionally, deliberately, or recklessly damage, destroy or obstruct access to bat roosts.

2.2 A bat roost is defined as being any structure or place that is used for shelter or protection, or as a resting place, and a roost retains such designation whether bats are present or not.

3. METHODOLOGY

3.1 All the building structures present within the site boundary were assessed for their potential to support roosting bats. Buildings were assessed using a scale of Negligible, Low, Moderate or High for this purpose. Appendix 1 provides a description of the features used to determine the assessment score.

3.2 All the accessible internal surfaces of the buildings were subject to a detailed examination for the presence of current or recent use by bats. The buildings were also examined externally for signs of use by bats, as well as noting any potential access points and features of potential use. Mature trees within the site boundary were also inspected for indications of use by bats. Binoculars were used to scan for potential bat access/exit points on the exterior of buildings. Features with appreciable potential and that were accessible were then inspected using ladders and a Pro-vision 100 fibre-optic endoscope. Interiors of buildings were inspected with the assistance of torches.

3.3 An evening emergence survey was carried out by two surveyors commencing 30 minutes before sunset and finishing 60 minutes after sunset. Survey was aided by the use of ultra-sonic bat detectors (Batbox Duet); echolocation calls were recorded on MP3 recorders for later sound analysis using BatSound, to aid species identification.

3.4 A dawn swarming survey was carried out by two surveyors commencing 90 minutes before sunrise and finishing 15 minutes after sunrise.

4. BUILDING ASSESSMENT

4.1 Pear Tree Farm consists of two large former barns, currently used for the storage of building materials and a single unoccupied detached farmhouse. It should be noted that the farmhouse is being retained under site development proposals.

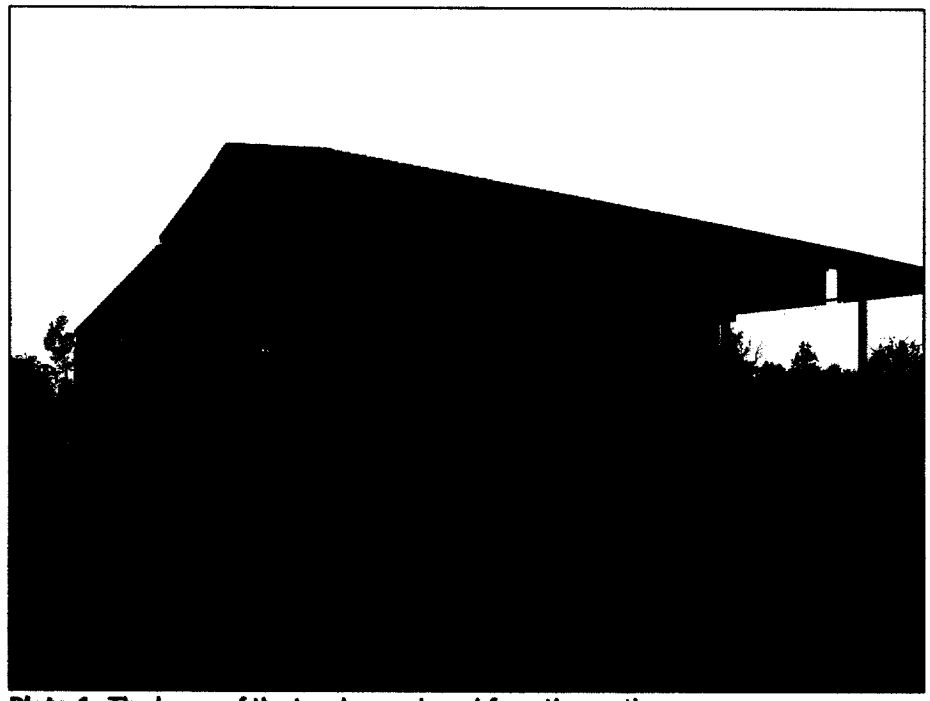

Plate 1: The larger of the two barns viewed from the south.

4.2 The two barns are large open fronted 'Dutch barn' types with concrete block walls to c.2.5m in height with steel sheet walls above. The buildings have steel or timber supports and crysotile or corrugated sheet steel roofs.

4.3 The farmhouse is a detached brick built structure of roughly 100yrs old. The roof is intact and well sealed with a slate covering; the gable ends are well mortared and sealed at the roof-wall junction.

4.4 Table 1.1 below summarises the assessment of buildings undertaken to determine their potential to support roosting bats.

Table 1.1: Building description and current value for roosting bats

Building	Description	Features of value to roosting bats	Assessment
Barn 1	Large open Dutch barn, internally subdivided into two separate units. Partial breeze block walls and timber/steel framed beneath a crysotile and corrugated sheet steel roof.	None, some potential as a night roost/feeding perch for Long-eared bat.	Negligible - Low
Barn 2	Large open Dutch barn, internally subdivided into three separate units. Partial breeze block walls and timber/steel	None, some potential as a night roost/feeding perch for Long-eared bat.	Negligible - Low

Building	Description	Features of value to roosting bats	Assessment
	framed beneath a crysotile and corrugated sheet steel roof.		
Farmhouse	c.100yrs old detached farm cottage. Double skinned brick walls beneath well sealed gable ended roof. Intact slate roof covering. Wooden fascia boards at eaves pressed tight against brickwork.	Small gaps in places behind fascia board.	Low

5. RESULTS

5.1 Bat evidence in the form of 2 fresh droppings of a size typical of the pipistrelle species (*pipistellus spp.*) were found on stored building materials inside one of the barns. These droppings were almost certainly voided by foraging pipistrelles, not by bats roosting within the barns *per se*.

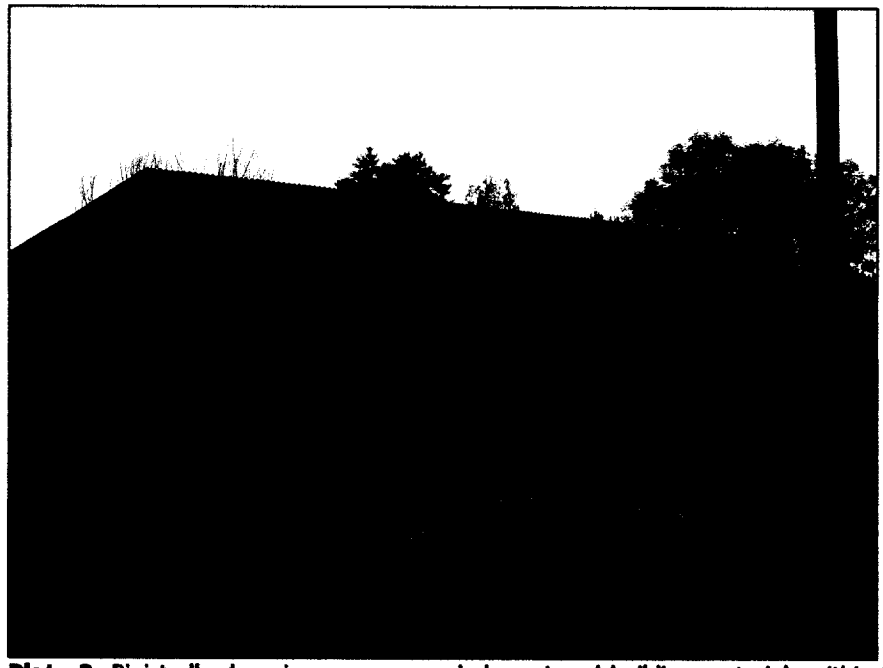

Plate 2: Pipistrelle droppings were recorded on stored building materials within this barn

5.2 Nine common pipistrelles *Pipistrellus pipistrellus* were observed flying through the site in a westerly direction and foraging intermittently inside the open barns. Surveys at dawn recorded up to 17 common pipistrelles flying through the site in an easterly direction presumably returning to a substantial off-site roost elsewhere in the village.

5.2 No bats were recorded emerging from the buildings on site or returning to them at dawn.

6. DISCUSSION AND RECOMMENDATIONS

6.1 No bat roosts were recorded by the survey as being present within the buildings. The surveys were undertaken during the summer (maternity) period of 2007; it is therefore reasonable to state that no maternity roosts are present within the buildings at Pear Tree Farm. The buildings were all of low or negligible potential to support roosting bats throughout the year, there are no obvious features capable of supporting hibernating bats. It is possible that the farmhouse could be used by single or small numbers of bats between spring and autumn, although this is unlikely, given the general unsuitability of the building and the more obvious suitability of other buildings within the village of Ratby.

6.2 No further surveys are recommended and no constraints to the timing or method of demolition/renovation of all three buildings are considered appropriate.

6.3 In the unlikely event that a bat/bats or evidence of a bat roost is discovered at a later stage in development, works should immediately stop and advice be sought from a suitably qualified ecologist or from Natural England.

6.4 The site is clearly of some importance as a commuting route/foraging corridor for pipistrelles. Habitat connectivity should therefore be maintained across the site by the retention of trees and boundary hedgerows wherever possible.

6.5 The developer has indicated that the enhancement of the site for bats would be appropriate within the scope of works. With this in mind, the inclusion of five integrated woodcrete or wooden bat boxes is recommended to ensure that no net loss of bat roost potential would occur as a result of site development.

APPENDIX 1

Assessment of potential to support roosting bats Grading system for Buildings

It should be noted that the grading system below only reports on the situation at the time of survey. Should bat activity levels change after the initial survey, or should the buildings be modified (for example if roof tiles are removed or fascia boards develop cracks), the category may need revision.

Please note: Intermediate categories (for example Low – Moderate value) may apply.

Category (Potential value)	Description
No/negligible value	Buildings with no or very few features capable of supporting roosting bats. Often buildings are of 'sound' well-sealed structure, or have a single skin and no roof void. They tend to have high interior light-levels, and little or no insulation. Buildings without any roofs may also fall into this category.
Low value	Buildings of largely unsuitable construction, but with few features of potential value to bats (e.g. gaps above windows, apparently shallow crevices). No supporting evidence (e.g. droppings / staining) found. Buildings may be surrounded by poor or sub-optimal bat foraging habitat, as is often the case in urban-centre locations.
Moderate value	Buildings usually of brick or stone construction with a number of features of obvious potential value to roosting bats e.g. loose roof / ridge tiles, gaps in brickwork, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt.
High value	Buildings with a large number of features of obvious potential value to bats (as above). Bats may be suspected to roost within the building (at least at certain times of year), but no supporting evidence found.
Confirmed roost	Bats discovered roosting within the building, or recorded emerging from / entering the building at dusk and / or dawn. Building found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.