

Cannon Hall
Bat Survey Report
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1. Summary

- 1.1.1 A bat survey of Cannon Hall was commissioned by Karen Buttery of Barnsley Council on 19th July 2023.
- 1.1.2 The survey was undertaken to inform proposals to re-roof the main Grade II* listed house at Cannon Hall.
- 1.1.3 Bat survey works detailed in this report include a desk-based study, an internal and external visual inspection and one nocturnal survey.
- 1.1.4 No historic bat records relating to roost presence within the main house at Cannon Hall were received from either Barnsley Biological Records Centre or South Yorkshire Bat Group.
- 1.1.5 No evidence of bat roosting was recorded during the visual inspection of the house. The stone roofed section of the house (not to be impacted by proposed plans) displayed moderate bat roost suitability, however, the remainder of the building displayed no more than a low level of suitability.
- 1.1.6 No evidence of bat roosting was recorded from the surveyed building during the nocturnal survey, demonstrating the probable absence of roosting bats.
- 1.1.7 Given the stone slate roofed section of the building is not to be impacted by the scheme, no further bat survey is considered necessary providing works commence within 24 months of the survey date. If works commence after this time, then Middleton Bell Ecology should be contacted to determine the requirement for update survey works to be undertaken.
- 1.1.8 Given that stone-slates are to be used during re-roofing of the kitchen the use of non-bitumen coated roofing membranes (formerly known as breathable roofing membranes) must be completely avoided, with only bituminous Type 1F hessian backed felt to be used. The justification for this recommendation is that bats have been shown to regularly become entangled and die in the component filaments of modern woven roofing membranes. If irregular stone-slates are used, then it will not be possible to prevent future bat access into the roof, whereupon they could come into contact with roofing membranes.
- 1.1.9 An active house martin nest was recorded from the northeast elevation of the kitchen.
- 1.1.10 If works are to commence during the known bird nesting period (March-September), they should be preceded by a nesting bird check, to be undertaken by an ecologist.
- 1.1.11 Works should proceed with caution and vigilance for unexpected bat presence, as single bats can roost almost anywhere. If bats are subsequently discovered, work should cease, and further advice sought without delay.

2. Introduction

- 2.1.1 A bat survey of Cannon Hall was commissioned by Karen Buttery of Barnsley Council on 19th July 2023.
- 2.1.2 The survey was undertaken to inform proposals to re-roof the main Grade II* listed house at Cannon Hall.
- 2.1.3 Bat survey works detailed in this report include a desk-based study, an internal and external visual inspection and one nocturnal survey.
- 2.1.4 Cannon Hall comprises a former country house now in active use as a museum owned and operated by Barnsley Council. The house is located off Bark House Lane in Cawthorne, approximately 7.8 km northwest of Barnsley town centre.

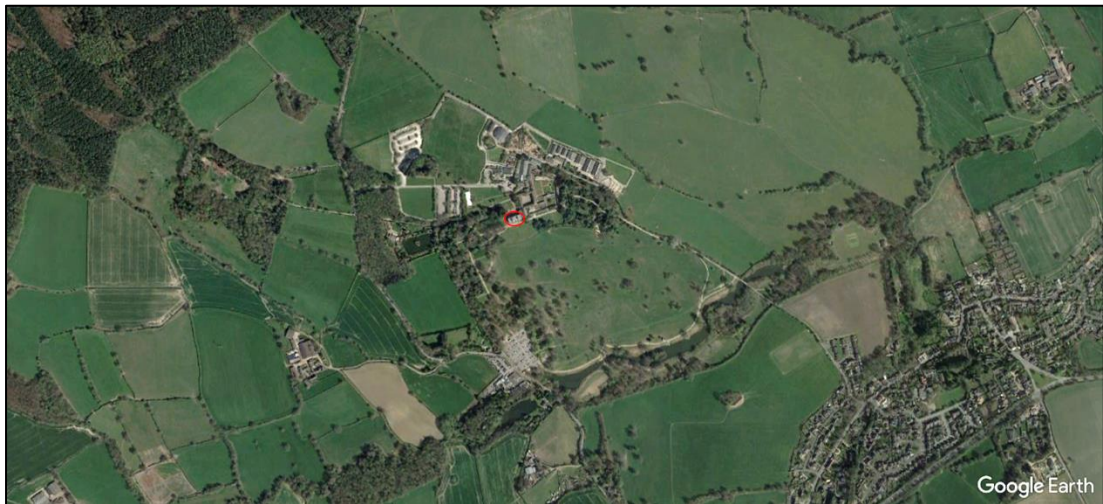
3. Habitat Assessment

- 3.1.1 Cannon Hall is located to the north of parkland and formal gardens associated with the former country house and now used as a public park. Wooded sections of the parkland, scattered trees and a series of lakes at the southern end of the parkland all comprise high quality bat foraging habitats. The wider area is rural and comprises mixed habitats including pasture, woodland, arable and the village of Cawthorne.
- 3.1.2 The wider area was expected to support a high density of bats belonging to a diverse range of species. Table 1 summarises the habitats present, adjacent to and further afield of the surveyed building.

Table 1. Location and habitat table

Name and address: Cannon Hall, Bark House Lane, Cawthorne, S75 4AT			
OS Grid Ref. SE 27209 08333		Altitude. 118 m	
Local Planning Authority: Barnsley Council			
Features on site and adjacent to site			
Feature	On site	Adjacent	Comments
Buildings	✓	✓	Located adjacent to other associated historic buildings including stable block
River bordered by trees			Daking Brook 420 m southeast of site
Standing water		✓	Lakes within parkland on course of Daking Brook
Bridges tunnels and culverts			Over Daking Brook
Trees	✓	✓	Trees within wooded blocks adjacent to western edge of Cannon Hall
Woodland	✓	✓	
Grassland		✓	Lawn adjacent to southern elevation of Cannon Hall

Figure 1. Site location, as indicated by red circle



3.2 Aims

3.2.1 The survey was conducted to help determine the following:

- The presence/absence of roosting bats.
- Bat roosting areas and access/egress points into the building.
- The level of bat roost potential associated with the building.
- The number and species of bat roosting within the buildings if present.
- Identify further survey work or mitigation requirements.

4. Methodology

4.1 Data Consultation

4.1.1 A desk study with both Barnsley Biological Records Centre (BBRC) and South Yorkshire Bat Group (SYBG) for locations within 2 km of the site were requested.

4.2 Field Survey

Internal and External Visual Inspection

4.2.1 The internal and external visual inspected was undertaken on 26th July 2023 by Robert Bell (MCIEEM; Class license WML-A34-Level 4, 2016-25236-CLS-CLS).

4.2.2 The following activities were carried out during the surveys in compliance with relevant Bat Survey Guidelines (Collins, 2016):

- A brief inspection and assessment of the site and habitats present to within 300m.
- An extensive examination of all parts of the building both inside and out to record structural features and condition and to record features that may be suitable for roosting bats. Particular attention was paid to any crevices or gaps in walls, lintels, gaps between beams and joists and to the possibility of finding droppings stuck to walls, floors or other surfaces, or insect remains below beams, among a number of other factors. All and signs indicative of a bat roost

presence including live or dead bats, droppings, feeding remains, scratch marks and staining were recorded.

- An assessment of the building's bat roost potential (negligible, low, moderate, high or confirmed roost).

4.2.3 In addition:

- Recording of any signs of nesting bird usage of the building.

4.2.4 The following equipment was used or at hand during the survey:

- Clulight
- Binoculars
- Endoscope
- Ladders
- Camera

Nocturnal Survey

4.2.5 One dawn return survey was undertaken by four surveyors. The survey was undertaken by Robert Bell, Greg Slack (MCIEEM; Class licence WML-A34-Level 4, 2017-28068-CLS-CLS), Ian Wright (Bat Survey Class licence WML-A34-Level 2, 2023-11218-CLS-CLS) and Carl Dixon.

4.2.6 The dawn return survey was undertaken on 28th July 2023 and continued from 1.5 hours prior to sunrise until 15 minutes after sunrise.

4.2.7 All surveyors were equipped with Wildlife Acoustics EM Touch bat detectors and iPad/iPod recorders. Three Canon XA10 video cameras and one Panasonic VX980 infra-red video cameras were used during the survey. Camera and surveyor positions are shown in Figure 2.

Figure 2. Nocturnal survey plan



4.3 Survey Limitations

4.3.1 No significant limitations to survey works were encountered.

5. Results

5.1 Data Consultation

5.1.1 A total of 148 bat records were received from Barnsley Biological Records Centre. Species positively identified in these records included common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, whiskered bat *Myotis mystacinus* and Natterer's bat *Myotis nattereri*. None of the records provided related to the main house on the Cannon Hall site, however, a common pipistrelle was recorded commuting in the immediate vicinity of the building in 2016.

5.1.2 A total of 150 bat records were provided by South Yorkshire Bat Group. The same species were included as detailed in the record centre's records. Again, none of the records provided related to the former country house. The nearest records were collected from the Deer Shed, a known brown long-eared bat maternity roost, most recently recorded in active use in 2019 and located c.200 m southwest of Cannon Hall.

5.2 Field Survey

Internal and External Visual Inspection

5.2.1 No signs of bat presence were recorded during the visual inspection. One section of the building had a stone slate roof (not to be impacted by the scheme) which displayed a moderate level of bat roost suitability, however, the remainder of the building displayed low bat roosting suitability.

Description

5.2.2 Cannon Hall is a large former country house most likely dating back to the 1700s (Plates 1-4). The house is built of coursed dressed sandstone with a central three storey section and a pair of two storey side wings. A stone built kitchen extends from the northeast elevation. The main house has parapet wall tops, internal rain water goods and single-pane wooden sash windows. The main house has flat bitumen coated roofs with numerous stone chimneys (Plate 5). The kitchen included a dual-pitched and hipped stone slate covered section of roof with a lead ridge, however, the majority of the multi-pitched kitchen roof was covered with bitumen coated felt (Plate 6).

External bat roost potential

5.2.3 The exterior of Cannon Hall, and the roof in particular, lacked many potential bat roosting features.

5.2.4 The majority of the roof, being either flat or covered with bituminous felt, lacked potential roost features, the exception comprising the single relatively-small stone slate covered sections of roof (Plate 6). Stone slate covered roofs are associated with use by bats, which may roost in crevice spaces between the stone slates, due to the

uneven width of the stone slates. Other potential roost features on the roof were largely limited to a low number of open joints in the chimneys (Plate 7), with these joints generally open on both the external and internal faces of the chimneys. In addition, flashing fitted below the parapet was slightly lifted in places, however, such openings were generally superficial (Plate 8). A wooden fascia board on the northeast elevation of the kitchen had a number of small (c.15 mm wide) spaces between masonry and the rear of the fascia board, suitable for use by roosting bats.

- 5.2.5 An active house martin *Delichon urbicum* nest was recorded from the northeast elevation of the kitchen.

Internal inspection

- 5.2.6 The roof voids associated with the central section of the house and the two wings were only c. 0.5-0.7 m in height (Plate 9) and as a result only a limited inspection of these voids was possible. These voids lacked insulation. No signs of roosting bats were recorded from these areas with no potential access points noted.
- 5.2.7 The roof space above the kitchen comprised a 2 m high void with the felt suspended on a ridge beam, king-post trusses, rafters and battens (Plate 10). The roof void lacked insulation and was dusty, with no potential bat access points or signs of bat presence noted.

Plate 1. Southeast elevation of Cannon Hall



Plate 2. Southwest elevation



Plate 3. Northwest elevation



Plate 4. Northeast elevation of kitchen



Plate 5. Looking across roofs from western corner



Plate 6. Kitchen roof, including small section of stone slate covered roof



Plate 7. Open joint on chimney



Plate 8. Section of lifted flashing on internal face of parapet



Plate 9. Void above wing of house



Plate 10. Roof void above kitchen



Nocturnal Survey

28th July 2023 – dawn return survey

- 5.2.8 The temperature at the beginning of monitoring was 14°C, with a light air (Beaufort Scale Force 1) and 40 % cloud. The conditions remained largely the same throughout the survey. The weather was dry throughout. Sunrise was at 05:14.

- 5.2.9 No bat roosting activity was recorded from Cannon Hall during the survey. A single probable whiskered or Brandt's bat *Myotis brandtii* was however recorded roosting, outside the survey area (Figure 2).
- 5.2.10 The last bat recorded comprised a commuting common pipistrelle, recorded at 04:50 (24 minutes before sunrise). Intermittent common pipistrelle activity was recorded before that time, mainly from the surveyor to the east of the kitchen. In addition, two noctule commuting passes were recorded. Prior to the whiskered or Brandt's bat roosting, a bat of this species group was recorded but following the roosting event no further activity from bats of this species group was noted.

Figure 2. Location of whiskered or Brandt's bat roost recorded during dawn survey



6. Assessment

6.1 Summary and Evaluation of Findings

- 6.1.1 No historic bat records relating to roost presence within the main house at Cannon Hall were received from either Barnsley Biological Records Centre or South Yorkshire Bat Group.
- 6.1.2 No evidence of bat roosting was recorded during the visual inspection of the house. The stone roofed section of the house (not to be impacted by proposed plans) displayed moderate bat roost suitability, however, the remainder of the building displayed no more than a low level of suitability.
- 6.1.3 No evidence of bat roosting was recorded from the surveyed building during the nocturnal survey, demonstrating the probable absence of roosting bats.
- 6.1.4 An active house martin nest was recorded from the northeast elevation of the kitchen.

6.2 Legislation and Policy Guidance

Bats

- 6.2.1 Bats receive protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981 (as amended).
- 6.2.2 It is an offence to:
 - Deliberately capture (or take), injure or kill a bat.
 - Intentionally or recklessly disturb bats whilst they are occupying a structure or place used for shelter or protection or obstruct access to any such place.
 - Damage or destroy the breeding or resting place (roost) of a bat.
 - Possess a bat (live or dead), or any part of a bat.
 - Intentionally or recklessly obstruct access to a bat roost.
 - Sell (or offer for sale) or exchange bats (dead or alive), or parts of parts.
- 6.2.3 The Convention on Biological Diversity, signed in Rio de Janeiro, Brazil in 1992, requires member states to develop national strategies and to undertake a range of actions aimed at maintaining or restoring biodiversity. The UK Biodiversity Strategy was produced in response to the Convention.
- 6.2.4 In England & Wales, the Natural Environment and Rural Communities (NERC) Act, 2006 imposes a duty on all public bodies, including local authorities and statutory bodies, in exercising their functions, “to have due regard, as far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. It notes that “conserving biodiversity includes restoring or enhancing a population or habitat”. Barbastelle *Barbastella barbastellus*, Bechstein’s bat *Myotis bechsteinii*, brown long-eared bat, greater horseshoe bat *Rhinolophus ferrumequinum*, lesser horseshoe bat *Rhinolophus hipposideros*, noctule and soprano pipistrelle are included as priority species within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. At a more local level there are Local Biodiversity Action Plans for smaller geographical areas which may cover a greater or lesser range of bat species.

- 6.2.5 Where it is proposed to carry out works which will have an adverse impact on roosting bats, the site must either be registered on the Bat Mitigation Class Licence (BMCL) or Earned Recognition (ER) licence, or a European Protected Species (EPS) license must first be obtained from Natural England. This requirement applies even if no bats are expected to be present when the work is carried out.
- 6.2.6 The National Planning Policy Framework for England was revised in 2021. This document states that plans should 'promote the conservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity'.

Birds

- 6.2.7 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to:
- Intentionally kill, injure or take any wild bird.
 - Take, damage or destroy the nest (whilst being built or in use) or eggs of any wild bird.

6.3 Further Survey, Recommendations and Enhancements

Bats

- 6.3.1 Given the stone slate roofed section of the building is not to be impacted by the scheme, no further bat survey is considered necessary providing works commence within 24 months of the survey date. If works commence after this time, then Middleton Bell Ecology should be contacted to determine the requirement for update survey works to be undertaken.
- 6.3.2 Given that stone-slates are to be used during re-roofing of the kitchen the use of non-bitumen coated roofing membranes (formerly known as breathable roofing membranes) must be completely avoided, with only bituminous Type 1F hessian backed felt to be used. The justification for this recommendation is that bats have been shown to regularly become entangled and die in the component filaments of modern woven roofing membranes. If irregular stone-slates are used, then it will not be possible to prevent future bat access into the roof, whereupon they could come into contact with roofing membranes.

Birds

- 6.3.3 House martin are known to nest on the exterior of the kitchen. If works are to commence during the known bird nesting period (March-September), they should be preceded by a nesting bird check, to be undertaken by an ecologist.

6.4 Conclusions

- 6.4.1 No evidence of bat presence was recorded in association with the building during the desk-based survey, the visual inspection or the nocturnal survey. It is therefore considered that the survey work undertaken has demonstrated the probable absence of roosting bats.
- 6.4.2 No further survey effort is considered necessary, providing works commence within 24 months of the survey date. If works commence after this date, then Middleton Bell Ecology should be contacted to determine the requirement for update survey.
- 6.4.3 Works should proceed with caution and vigilance for unexpected bat presence, as single bats can roost almost anywhere. If bats are subsequently discovered, work should cease, and further advice sought without delay.
- 6.4.4 House martin are known to nest on the exterior of the kitchen. If works are to commence during the known bird nesting period (March-September), they should be preceded by a nesting bird check, to be undertaken by an ecologist.

7. References

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. The Bat Conservation Trust.

Appendix 1. Bat Records Collected During Survey

In accordance with best practice and the requirements of bat licensing, bat records collected during surveys are supplied to the relevant biological record centres and bat groups. The records to be supplied in accordance with this survey are shown below. House names/numbers are not given out by record holding organisations except under very particular circumstances. Please let us know if you object to the distribution of these records.

Date	Species	Site Address	OS Grid Reference	Notes
28/07/2023	Whiskered/ Brandt's bat	Gardener's Cottage at Cannon Hall, Bark House Lane, Cawthorne, S75 4AT	SE 27249 08364	One bat roosted in stone slate covered roof
28/07/2023	Common pipistrelle	Cannon Hall, Bark House Lane, Cawthorne, S75 4AT	SE 27209 08333	Pass
28/07/2023	Noctule	Cannon Hall, Bark House Lane, Cawthorne, S75 4AT	SE 27209 08333	Pass