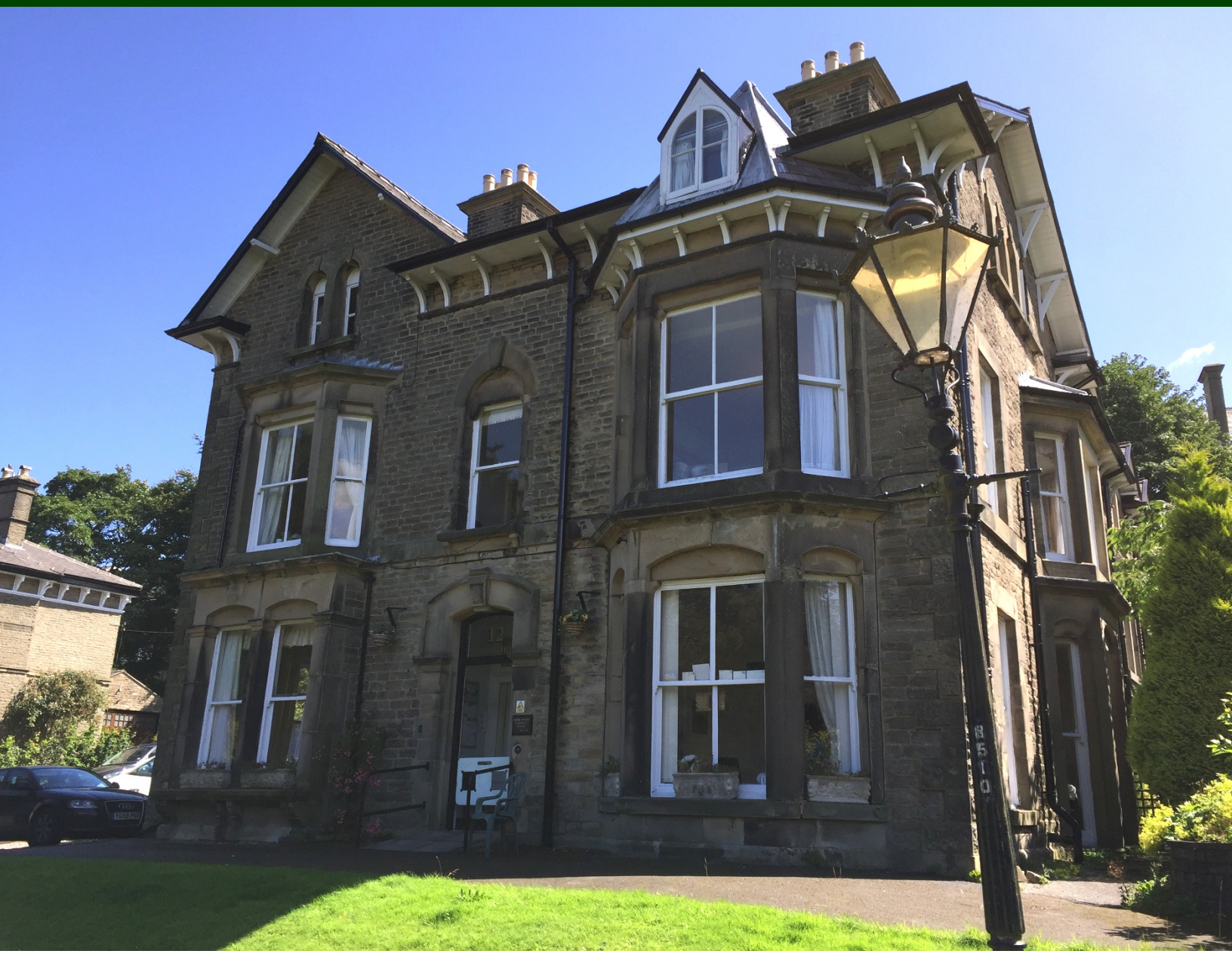
Derby House, Buxton
Bat Survey

February 2018



Dunelm Ecology
consultant ecologists

Contents

1 Introduction

1.1 Background

1.1.1 Dunelm Ecology Ltd was commissioned to carry out a bat survey of Derby House, Buxton. The survey was undertaken in support of proposals to convert the former care home into residential apartments. Full details of the works can be found within the Design and Access Statement but in summary, works would principally be restricted to the interior of the building. The roof, including roof voids and soffits, would not be affected by the development proposals although new loft hatches would be added to provide access to the voids.

1.1.2 The main objective of the survey was to identify if bats are using the building as a roost site, and if so, the species and numbers of bats present, and type of roost. This report provides a brief overview of the ecology and legal protection afforded to bats in the UK. It includes a detailed description of the survey methods used and the results of the study. The implications of the survey findings are discussed; with an assessment of potential impacts provided and recommendations given as to what further measures are considered necessary.

1.2 Bat Ecology

1.2.1 There are 17 species of bat known to be resident (i.e. breed) in the British Isles, nine of which regularly occur in Derbyshire. Habitat requirements vary widely, both on an individual and species level, although certain features, such as woodland, parkland, traditional pasture, marshes and areas of freshwater, are often focal points for foraging as insects are plentiful in these areas (Mitchell-Jones 2004). Bat roosts tend to be more common in areas where such habitats are present. Bats use linear features such as rivers, hedgerows, roads and woodland edges as landmarks in order to commute from one location to another (Schofield and Mitchell-Jones 2003).

1.2.2 Bats utilise different roosts at different times of the year. Between late October and March, bats hibernate; this requires an unexposed roost with a stable temperature, typically a cave, cellar or tunnel. Around March, the bats emerge and gradually move to their summer roosts, typically within man-made structures or suitable crevices in trees. During the spring and summer period, female bats gather together at maternity roosts to give birth and rear their young. Most births occur between late-June and mid-July, with the young able to fly within three to five weeks (Altringham 2003). By the end of August, most of the young bats are independent and the colony begins to break up (Schofield and Mitchell-Jones 2003). Mating takes place between August and December, either at the winter hibernation site or at autumn mating sites. The numbers of bats utilising these various roosts can range from single bats to hundreds of bats in a nursery colony or hibernation site (Altringham 2003).

1.3 Legislative and Planning Context

1.3.1 All British bat species are protected under the Wildlife and Countryside Act (WCA) 1981, which has been amended by later legislation, including the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2010. Bats are listed on Schedule 5 of the

WCA and are, therefore, subject to some of the provisions of Section 9 which, with the amendments, make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection (S9:4b).

- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat (S9:4c).

1.3.2 Bat species are also listed under Annexes IIa and IVa of the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, also known as the 'Habitats Directive'. Inclusion on Annex IVa means they are consequently identified as European Protected Species (EPS) and protected under the Conservation of Habitats and Species Regulations 2010. These regulations make it an offence to:

(a) deliberately capture, injure or kill any wild animal of a European protected species,

(b) deliberately disturb wild animals of any such species, in such a way as –

(i) to impair their ability to survive, to breed or reproduce, or to rear their young, or

(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate, or

(iii) to affect significantly the local distribution or abundance of the species to which they belong;

(c) damage or destroy a breeding site or resting place of such an animal.

1.3.3 Under these Regulations it is an offence to damage or destroy a breeding site or resting place whether a bat is in occupation or not.

1.3.4 Seven native British bat species are listed as 'Priority Species' and are referred to as 'species of principal importance' for the conservation of biodiversity in England and Wales within Section 74 of the CRoW Act 2000 and Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

1.3.5 The effects of developments on protected species are considered in the National Planning Policy Framework (NPPF). Under the NPPF, LPAs in England are required to take measures to protect the habitats of such species from further decline, protect the species from the adverse effect of development and refuse planning permission for development that harms these species unless the need for, or benefit of, the development clearly outweighs that harm.

2 Methods and Approach

2.1 Field Survey

Daytime Inspection

2.1.1 A detailed inspection survey of Derby House was carried out during daylight hours on the 8 August 2016 following the methodology outlined in the *Bat Mitigation Guidelines* (Mitchell-Jones 2004) and *Bat Surveys Good Practice Guidelines* (Collins 2016). The survey involved systematically searching the exterior and interior of the building for bats and their field signs with the aid of ladders, endoscope (Snakevision), close-focusing binoculars (Opticron Countryman BGA 8x42) and a powerful torch (Clulite 1M candle-power). Such signs may include insect remains, droppings, grease marks, urine stains and smoothing or lack of cobwebs. In addition, the building was assigned to a roost potential category, based on its suitability for supporting roosting bats (see Table 1).

Table 1 Bat Roost Assessment Criteria

Roost Potential Category	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure or tree 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.
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 (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).
High	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.

Nocturnal Survey

2.1.2 A dusk emergence survey was undertaken on 31 July 2017. The survey aimed to record bats exiting the building and started 15 minutes before sunset and finished up to 90 minutes after sunset (Mitchell-Jones 2004). Two dawn re-entry surveys were also undertaken on 17 August and 27 September 2016. The surveys were targeted at identifying bats entering the building and started 90 minutes before sunrise and finished at sunrise. Dawn surveys are a particularly efficient method of locating bat roosts, as individuals returning to the roost frequently 'swarm' around the entrance point before entering, thus making the bats more conspicuous and easier to locate (Mitchell-Jones 2004). Repeat external inspection surveys were carried out before/after the nocturnal surveys.

2.1.3 During all surveys, surveyors were positioned in strategic locations to ensure that potential roosting features could be viewed clearly. The surveys were undertaken using frequency division (Batbox Duet) and time expansion (Pettersson D-240x) bat detectors coupled with Anabat Express detectors to record bat calls for later analysis using ANALOOK software. The time of exit/entry and the number of bats and species (if identifiable) were recorded; whilst any bat activity in the general area was also noted.

Table 2 Summary of Bat Survey Times and Weather Conditions

Survey Type	Date	Timings	Weather Conditions
Daytime Inspection	08/08/2016	11:00 – 13:00	NA
Dusk emergence	31/07/2017	20:49 – 22:34 (sunset: 21:04)	Dry, light breeze, 14 - 13°C, 100% cloud cover.
Dawn re-entry	27/09/2016	04:58 – 06:28 (sunrise: 06:28)	Dry, calm, 10°C, 100% cloud cover
Dawn re-entry	17/08/2016	04:22 – 05:52 (sunrise: 05:52)	Dry, calm, 11°C, 0% cloud cover

2.2 Personnel

2.2.1 The daytime survey and all nocturnal surveys were led by Jon Guarnaccio MCIEEM who has 15 years experience as a professional ecologist and has held a Natural England bat survey licence since 2005 (2015-15066-CLS-CLS). Jon was assisted by three other suitably qualified and experienced bat surveyors during the dusk survey and one surveyor during the dawn surveys.

2.3 Survey Constraints

2.3.1 The surveys were carried out at an appropriate time of year following best practice guidelines. Only one roof void was accessible during the inspection survey although the nocturnal surveys are considered likely to have compensated for this limitation.

3 Results

3.1 Field Survey

Daytime Inspection Survey

3.1.1 The results of the bat survey are shown in Table 3 below. In summary no evidence of bats was recorded although Derby House is assessed as having high bat roost potential due to it supporting numerous potential roost features and its location. The building is located immediately adjacent to Buxton Pavilion Gardens which provides optimal bat foraging habitat. As such bat roosts are likely to be common in the vicinity especially considering that the area is characterised by large dwelling houses that are likely to support roost sites. House martins are nesting in two separate locations on the west and south elevations near the apex of gable sections.

Table 3 Daytime Inspection Results

Description	Roosting Opportunities & Signs of Bat Use	Roost Potential
Mid 19th century grade II listed building. Constructed from coursed millstone grit rubble with ashlar dressings. The walls are set under a series of pitched roofs clad with slate tiles. Only one roof void was accessible and this was lined with bitumastic felt and had a floor to apex height of 2.5 m. Several dormers protrude from the north, south and west elevations. Timber panelled eaves and spars are present on all sides of the building.	No evidence of bats was recorded. The building was re-roofed in the 1990s and is in good condition with very few potential access points observed. For example only a small number of gaps exist under ridge tiles. There are however numerous gaps under the eaves on all sides of the building, but particularly around gable sections on the west and south elevations. Additionally, there are several areas where mortar pointing has fallen away around quoins on the corners of the building but these appear to be superficial crevices.	High

Nocturnal Survey

3.1.2 No bats were recorded exiting or entering the building during the nocturnal surveys. However, common pipistrelle bats were recorded foraging around Derby House during all three surveys with some bats showing an interest in the building during the dawn surveys before dispersing. Bats were also recorded within close proximity (<15 minutes) of sunset and sunrise suggesting roost sites are present nearby.

4 Discussion

4.1 Assessment and Recommendations

4.1.1 There is no evidence to suggest that Derby House is used by roosting bats although it is located close to high value foraging habitat and supports a number of potential roost features. It should be noted that bats are notoriously cryptic in their roosting habits and often leave no clues of their presence, particularly when only low numbers of bats are concerned (Mitchell-Jones 2004). The presence of a summer non-breeding roost (low conservation value) used by solitary or low numbers of pipistrelle spp. bats should therefore not be discounted. However, it is highly unlikely that the building is used as a maternity roost (high conservation value) since these typically display numerous droppings outside roost access points, while bats are often seen or heard (e.g. grounded juvenile bats). Similarly, the presence of hibernating bats is also highly unlikely as the building does not provide the cool, humid and stable temperature conditions required for hibernation.

4.1.2 In light of the above, and given the minor nature of the planning proposals, it is considered that the works would have no adverse impacts on the local bat population or individual bats. However, if any external roof timbers around the eaves require replacing, these should be replaced with like for like and gaps retained. Additionally, timber battens are inserted within crevices over 100 mm deep and pointed around. The battens can then be removed before the mortar fully dries; ensuring that potential access points are retained and bats are not entombed.

4.1.3 It is recommended that works within 5 m of the identified house martin nests as well as any works affecting vegetation, take place outside the bird nesting season (which generally runs from March to August inclusive). If works cannot be avoided during the nesting season then it is recommended that inspections should be undertaken, no more than 48 hours prior to works commencing, to ensure that there are no active nests present. If nesting birds were confirmed to be present then works would need to be postponed until young have fledged or alternatively a no works buffer zone installed preventing access to within 5 m of the nest. Alternatively, if works start prior to the breeding bird season, house martins may be deterred from nesting, especially if bird proof netting is used as an extra precaution. This approach is recommended to avoid potential infringement of the legislation that protects all breeding birds in the Wildlife & Countryside Act 1981.

5 References

Altringham JD (2003). *British Bats*. Collins, London.

Collins J (2016). *Bat Surveys Good Practice Guidelines. Third Edition*. BCT, London.

Mitchell-Jones AJ (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Schofield HW & Mitchell-Jones AJ (2003). *The Bats of Britain and Ireland*. The Vincent Wildlife Trust, Ledbury.

Plate 1 Roof space

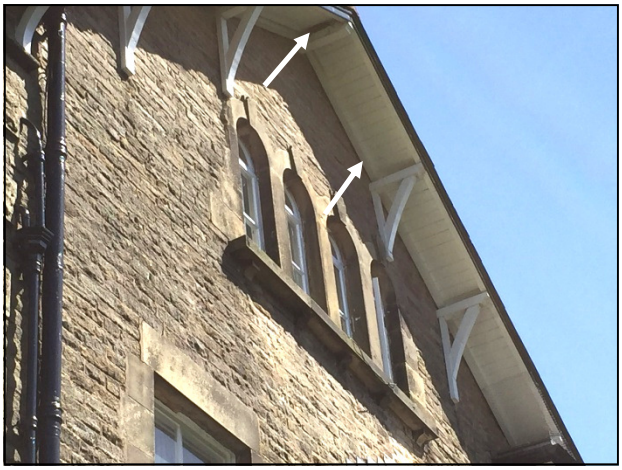


Plate 2 South elevation showing gaps under eaves and sand martin nests

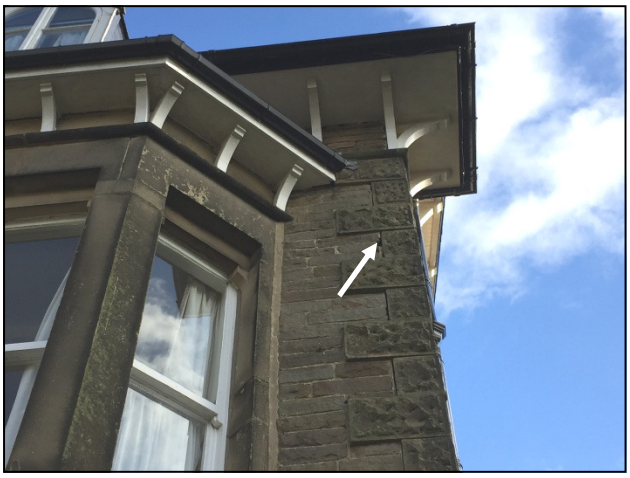


Plate 3 Gap where mortar has fallen away around quoins

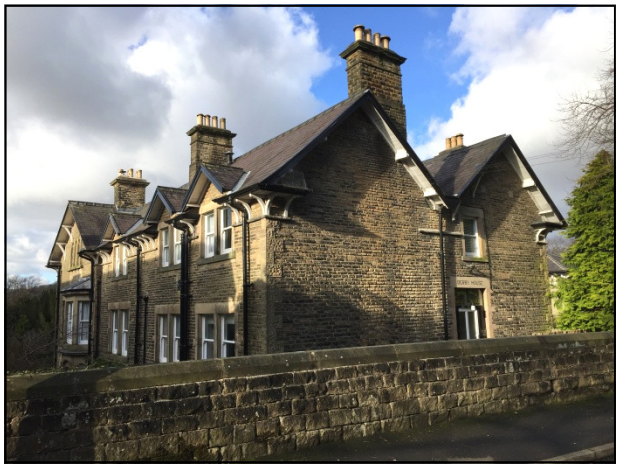


Plate 4 south and east elevations

Plate 5 North elevation

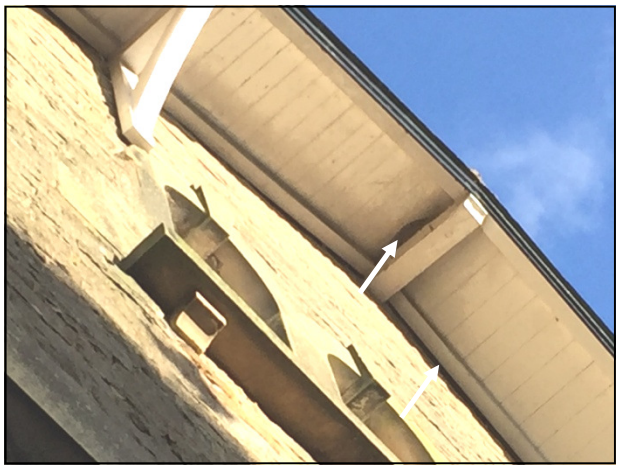


Plate 6 West elevation showing gaps under eaves and sand martin nests