Bat Roost Assessment

BE652.1

Fernside Avenue

Bagshaw Ecology Ltd
Unit 1 Town Hall, St George's Street,
Hebden Bridge, West Yorkshire HX7 7BY
Registered in England and Wales number 9211547
Tel: 01422 417310
Email: info@bagshawecology.co.uk
Website: www.bagshawecology.co.uk

Report title	Bat Roost Assessment
Report reference	BE652.1
Revision	A
Site address	Fernside Avenue, Almondbury, Huddersfield HD5 8NR
Grid reference	SE 16438 15705
Report compiled by	Amy Reddick BSc (Hons)
Report reviewed by	David Watts BSc (Hons) FdSc MCIEEM
Client	Northlight Architecture
Date	19th February 2018

Bagshaw Ecology

TABLE OF CONTENTS

EXECUTIVE SUMMARY **3**

1. INTRODUCTION **4**

1.1. BACKGROUND 4
1.2. SITE DETAILS 4

2. LEGISLATIVE CONTEXT **5**

2.1. LEGISLATION 5
2.2. POLICY 5

3. METHODS **6**

3.1. DATA SEARCH 6
3.2. SCOPING SURVEY 6

4. RESULTS **8**

4.1. DATA SEARCH 8
4.2. SCOPING SURVEY 9

5. IMPACT ASSESSMENT **10**

5.1. HABITATS 10
5.2. BUILDINGS 10

6. CONCLUSION AND RECOMMENDATIONS **11**

7. REFERENCES **12**

APPENDICES **13**

LIST OF TABLES AND FIGURES

FIGURE 1.1 MAP OF SITE AND SURROUNDING AREA (GOOGLE EARTH PRO, 2017) *4*

TABLE 3.1 BAT ROOST SUITABILITY CLASSES, THE CORRESPONDING TI SCORES AND THE PERCENTAGE OF STRUCTURES FOUND TO HAVE EVIDENCE OF BATS DURING THE TESTING PHASE. *6*

TABLE 4.1 CONSERVATION STATUS OF BATS IN WEST YORKSHIRE *8*

Bagshaw Ecology

Executive Summary

Bagshaw Ecology Ltd have been instructed by Northlight Architecture to carry out a Bat Roost Assessment of the buildings located at Fernside Avenue, Almondbury, Huddersfield HD5 8NR, in relation to an application for planning. The development proposals are to demolish the existing barn and construct two residential dwellings in its place.

The desk-based study found the surrounding area to provide suitable habitat for bats, with good terrestrial connectivity leading to and from the site.

The site of a barn which was adjoined to a row of terrace cottages. The barn was of stone construction with a pitched English slate tile roof. The building had some slightly lifted roof tiles and cracks in the interior walls with potential for cavity roosting bats. The Bat Roost Trigger Index (TI) indicated that the building had low potential for roosting bats; however, the building had no roof void and no evidence of roosting bats was observed. Therefore, it is not anticipated that bats have roosted within the buildings.

As the development proposals are to demolish the building, as a precautionary measure, it is recommended that potential roosting features are removed by hand under the supervision of a licensed bat worker.

It is recommended that the ecological value of the site is enhanced through the incorporation of a bat box into the development proposals.

1. Introduction

1.1. Background

1.1.1. Bagshaw Ecology Ltd have been instructed by Northlight Architecture to carry out a Bat Roost Assessment of the buildings located at Fernside Avenue, Almondbury, Huddersfield HD5 8NR hereafter referred to as 'the site'.

1.1.2. The purpose of the report is to:

- Determine if bats are present or absent in the buildings on the site.
- If bats are found to be present, to estimate the size and status of the roost.
- Where necessary, to identify the requirement for further surveys, for mitigation and/or ecological enhancement measures.

1.2. Site Details

1.2.1. The site consists of a disused barn.

1.2.2. The site is located at grid reference SE 12144 28362 and is accessed off the north of Fernside Avenue in Huddersfield. The site is bordered by a private track to the south, an area of wasteland to the north and by residential properties to the east and west.



Figure 1.1 Map of site and surrounding area (Google Earth Pro, 2017)

1.2.3. The development proposals are to demolish the existing barn and construct two residential properties in its place.

2. Legislative Context

2.1. Legislation

2.1.1. All bat species are protected under Schedule II of the Conservation of Habitats and Species Regulations 2010. The Conservation of Habitats and Species Regulations makes it an offence to kill, capture or damage a bat, or to destroy a breeding site or resting place of a bat. Any development which compromises the protection afforded to bats under the regulations will require a European Protected Species License from Natural England.

2.1.2. All British bats are protected under the Wildlife and Countryside Act 1981, extended by the Rights of Way Act (2000), making it an offence to deliberately or recklessly:

- Injure, kill, or capture a bat.
- Disturb a bat (whether in a roost or not).
- Possess or control any live or dead specimen of a bat.
- Destroy or obstruct access to any structure or place used for protection by a bat species.
- Sell, barter or exchange a bat.

2.2. Policy

2.2.1. The UK Biodiversity Action Plan (UKBAP) includes a list of 943 national priority species and 56 habitats of principal importance, with all species and habitats having specific action plans defining the measures required to ensure their conservation. Although the UKBAP has since been superseded by County Biodiversity Plans, it remains a useful point of reference.

2.2.2. Section 41 of the Natural Environment and Rural Communities Act (NERC) 2006 requires that any public bodies take into consideration any species and habitats listed in the UKBAP when implementing their duty and exercising any normal functions.

2.2.3. The National Planning Policy Framework (NPPF) states that planning decisions should aim to protect or enhance biodiversity and conservation interests, and where possible any development should aim to increase net gains in biodiversity.

3. Methods

3.1. Data Search

3.1.1. Aerial imagery and other online sources were consulted in order to give an appraisal of the surrounding landscape regarding its suitability for bats.

3.1.2. The Department of Rural and Agricultural Affairs' (DEFRA) Magic Maps website and the Natural England website were consulted as to any land-based designations and protected/notable species within 1km of the site.

3.2. Scoping Survey

3.2.1. The bat scoping survey was carried out on 8th February 2018. The survey was carried out by Amy Reddick (BSc Hons) an ecological consultant and licenced bat worker with experience in undertaking building inspections for bats (class licence 2017-32206-CLS-CLS).

3.2.2. The survey was based upon methodologies prescribed by Collins (2016), Mitchell-Jones (2004) and Mitchell-Jones and McLeish (2004). This involved an inspection of the exterior and interior of the building. Any structural features with potential for use by roosting bats were recorded and any suitable access points were identified. Any direct evidence of bats, such as scratch marks, oil stains, droppings and feeding remains were also identified.

3.2.3. Taking account of the structural features of the building, and the surrounding habitat, the building was assigned a level of roost suitability based upon professional judgement (see table 3.1) and evaluation using the Bat Roost Trigger Index (TI) (Underhill-Day, 2017).

3.2.4. The Bat Roost Trigger Index (TI) is a tool that assesses the features known to influence roost selection to assign a roost suitability class to a building or structure. The list includes 28 features that reflect A) the location and environment around the building, B) the exterior features such as roof materials, and C) the interior features particularly those within the roof void. By summarising the condition of each feature and assigning it a numerical score between a maximum of 1 and a minimum of 0.2, a geometric mean TI score between 0 and 1 is generated automatically. This score corresponds to one of the four bat roost suitability classes given in the Bat Conservation Trust guidelines (see table 3.1).

Table 3.1 Bat roost suitability classes, the corresponding TI scores and the percentage of structures found to have evidence of bats during the testing phase.

Bat Roost Suitability Class	Description	Corresponding TI score	Percentage of structures found to contain evidence of bats
High	Buildings that have many areas suitable for roosting with a large number of potential access points.	>0.7	98%
Medium	Buildings with a smaller number of areas suitable for roosting, but still supporting features that could be attractive to bats and potentially support maternity roosts.	0.6 – 0.7	56%

Bat Roost Suitability Class	Description	Corresponding TI score	Percentage of structures found to contain evidence of bats
Low	Buildings with limited roosting opportunities but which could be used on a sporadic or occasional basis which are unsuitable for maternity roosts.	0.5 – 0.6	31%
Negligible	Buildings which appear unsuitable for roosting bats due to a clear lack of roosting spaces such as voids etc. and/or absence of suitable access points.	<0.5	3%

4. Results

4.1. Data Search

4.1.1. The surrounding land use is suburban with areas recreational green space and small patched of woodland. Connectivity to the site is good and tree cover in the immediate surrounding area is intermediate, with several patches of woodland providing suitable habitat for commuting and foraging bats.

4.1.2. Magic Maps (DEFRA, 2018) hold records of one Ancient Woodland Priority Habitat, Benholmley Wood, which is approximately 466m to the southwest of the site. It also holds records of 13 Deciduous Woodland Priority Habitats within 1km of the site, the closest of which is 193m to the south of the site.

4.1.3. Magic Maps (DEFRA, 2018) hold no records of granted European Protected Species Licenses within 1km of the site.

4.1.4. Ten species of bat have been recorded in West Yorkshire, including Brandt's bat *Myotis brandtii,* Daubenton's bat, whiskered bat *Myotis mystacinus*, Natterer's bat *Myotis nattereri,* Leisler's Bat *Nyctalus leisleri,* noctule *Nyctalus noctula,* Nathusius' pipistrelle *Pipistrellus nathusii*, common pipistrelle, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat *Plecotus auritus* (Harris and Yalden, 2008).

Table 4.1 Conservation Status of Bats in West Yorkshire

SPECIES	UK BAP	IUCN RED LIST	UK POPULATION ESTIMATE (BCT 2010)	UK STATUS (BCT 2014)
Brandt's bat *Myotis brandtii*	N	Lower risk – least concern	15,000	Uncommon
Daubenton's bat *Myotis daubentonii*	N	Lower risk – least concern	560,000	Common
Whiskered bat *Myotis mystacinus*	N	Lower risk – least concern	64,000	Uncommon
Natterer's bat *Myotis nattereri*	N	Lower risk – least concern	148,000	Common
Leisler's bat *Nyctalus leisleri*	N	Lower risk – least concern	28,000	Uncommon
Noctule *Nyctalus noctula*	Y	Lower risk – least concern	50,000	Uncommon
Nathusius' pipistrelle *Pipistrellus nathusii*	Y	Lower risk – least concern	16,000	Uncommon
Common pipistrelle *Pipistrellus pipistrellus*	N	Lower risk – least concern	2,430,000	Common
Soprano pipistrelle *Pipistrellus pygmaeus*	Y	Lower risk – least concern	1,300,000	Common
Brown long-eared bat *Plecotus auritus*	Y	Lower risk – least concern	245,000	Common

4.1.5. Seven of the 10 species recorded in West Yorkshire, including whiskered bat, Brandt's bat, Natterer's bat, Leisler's bat, common pipistrelle, soprano pipistrelle and brown long-eared bat are known to roost in buildings during the spring, summer and autumn months (Harris and Yalden, 2008; Dietz *et al*, 2011; Collins, 2016).

4.1.6. Three of these species, including common pipistrelle, soprano pipistrelle and brown long-eared bat are known to hibernate in buildings (excluding cellars) during the winter months (Harris and Yalden, 2008; Dietz *et al*, 2011).

4.2. Scoping Survey

4.2.1. The site consisted of a disused barn which was adjoined to the adjacent terrace cottages. The building was of stone construction with a pitched English slate tile roof. The walls were in good condition on the south aspect. The east gable was in fair condition with some gaps observed at the apex and around the hay loft door. The north aspect had numerous gaps in the stone work revealing the rubble between the double skinned walls and gaps around the old archway which had been bricked up. The roof was in fairly good condition with some slightly lifted tiles.

4.2.2. The interior of the building had two-storeys. The ground floor was divided into three rooms by brick walls, all of the walls were painted or rendered with the exception of the west wall adjoining the cottage which had several gaps and cracks. These were covered by dense cobwebs. The upper floor was open to the roof which was lined with bitumen. There was a large wooden beam in the centre of the barn. Several gaps in the walls were observed through old bricked up ventilation holes and on the north aspect of the building where the wall had collapsed near to the roof. There were dense cobwebs covering the cracks on the interior walls. No evidence of roosting bats was observed.

5. Impact Assessment

5.1. Habitats

5.1.1. The surrounding area provides suitable habitat for commuting and foraging bats, with good terrestrial connectivity leading to and from the site.

5.2. Buildings

5.2.1. The barn had no separate roof void and no signs of roosting bats were observed. However, there were some features suitable for cavity roosting bats including lifted roof tiles, gaps into the building and cracks on the interior walls. Taking account of the features of the buildings and the habitats in the surrounding area, the building scored 0.58 in the Bat Roost Trigger Index (TI), indicating low potential for roosting bats (See Appendix 2). However, due to the lack of any signs indicative of roosting bats and the presence of dense cobwebs, it is not anticipated that bats are roosting within the building.

6. Conclusion and Recommendations

6.1.1. It is not anticipated that bats have roosted within the barn. The building does not exhibit any potential features suitable to support maternity roosts or hibernation roosts. The lifted roof tiles and cracks in the stonework have features suitable for use as a day roost and/or transitional roost for cavity roosting bats.

6.1.2. As a precautionary measure, it is recommended that the roof and upper-storey walls of the building are demolished by hand under supervision of a licensed ecologist. In the unlikely event that a bat is identified during works, works should cease and a Natural England European Protected Species Licence (EPSL) should be sought.

6.1.3. In accordance with the National Planning Policy Framework, it is recommended that the ecological value of the site is enhanced through the incorporation of a bat box into the development proposals. One bat box of type Schwegler 1FF should be hung on a tree at a minimum height of 5m, in a sheltered location and with clear flight paths to the entrance.

7. References

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

DEFRA (2017) Magic Maps [online]. Available at: >www.magic.defra.gov.uk< [accessed 15th February 2018]

Dietz, C., Helversen, O., Dietmar, N. (2011). Bats of Britain, Europe & Northwest Africa. London: A & C Black

Google Earth Pro (2017). Google Earth [online]. Available at: >www.google.co.uk/earth< [accessed 15th February 2018]

Harris, S., Yalden, D. (eds.) (2008). Mammals of the British Isles: Handbook 4th Edition. London: The Mammal Society

Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature

Mitchell-Jones, A.J., McLeish, A.P. (2004). Bat Workers Manual. Joint Nature Conservation Committee

Underhill-Day, N. (2017). Bat Roost Trigger Index. Swift Ecology.

Appendices

Appendix 1: Photographs



Plate 1: North aspect of the barn



Plate 2: East gable of the barn



Plate 3: South aspect of the barn



Plate 4: Interior of the ground floor



Plate 5: Interior of the ground floor



Plate 6: Interior upper-storey



Plate 7: Large beam and detail of the interior roof of the barn



Plate 8: Gaps around hay loft door



Plate 7: Gaps in collapsed portion of wall

Appendix 2: Results of the Bat Roost Trigger Index (TI) for the barn

Project:	**Fernside Avenue**	**Evidence:**	**None**
Code:	**BE652.1**	**Constraints:**	**None**
Date:	**15/02/2018**	**Surveyor:**	**Amy Reddick**
TRIGGER INDICES		**CATEGORY**	**TI VALUE**
A) Location, habitat and environmental context of structure			
T1: General location		Suburban or intensive farmland	0.67
T2: Foraging opportunities within 250 m		Moderate	0.67
T3: Foraging opportunities within 5 km		Good	1
T4: Commuting opportunities		Moderate	0.67
T5: Cover in vicinity of structure		Moderate	0.67
T6: External lighting in vicinity of structure		Moderate level	0.33
T7: Number and character of nearby buildings		Mixture of old and new	0.67
T8: Structure/building exposure		Low	1
B) Exterior features and characteristics of structure or building			
T9: Structure/building age		Old	1
T10: Size of Building		Intermediate size	0.67
T11: Main wall construction material		Old	1
T12: Condition of wall/roof pointing/render		Some gaps, cracks or crevices noted	0.67
T13: Condition of lintel/door frame features		Tightly sealed	0.33
T14: Condition of eaves/soffits/bargeboards		Tightly sealed	0.33
T15: Condition of weatherboarding/cladding		No boarding present	0.2
T16: Condition of lead flashing		No flashing	0.2
T17: Roofing material		Older style tiling	1
T18: Bat access potential		Numerous gaps or open-sided structure	1
C) Interior features and characteristics of structure or building			
T19: Character of roof void/roof space		No void or very limited roof space	0.2
T20: Character and condition of roof supports		Some gaps or cracks noted	0.67
T21: Presence and extent of cobwebbing		Numerous cobwebs in roof space	0.33
T22: Presence and condition of roof lining		Potential cavity but very limited access	0.33
T23: Light levels in roof void/space		Intermediate	0.67
T24: Protection from weather/wind		Well protected	1
T25: Temperature regime		Intermediate	0.67
T26: Level of (human, animal) disturbance		Moderate	0.67
T27: Flight Space		Good	1
T28: Flying Access (Horseshoe bats)		Potential	0.67
TRIGGER INDEX SCORE =		**0.58**	
BAT ROOST SUITABILITY =		**LOW**	

Bagshaw Ecology

Appendix 3: Site map	
Site name:	Fernside Avenue
Drawn by:	Amy Reddick
Date:	15th February 2018

Not to scale

