Dale House, Cawthorne

Ecological Impact Assessment

16th September 2021



Prepared by:

Middleton Bell Ecology, 33 Wilthorpe Road, Barnsley S75 1JA

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Site Name Dale House	**Location** Tivy Dale, Cawthorne, S75 4EH
Local Authority Barnsley Council	**Grid Reference** SE 27952 07475
Surveyor Robert Bell MCIEEM	**Date of Survey** 16/07/21
Soilscape Freely draining slightly acid loamy soils	**Designation of Site** None

UK Habitat Classification habitats on Site
Habitats: g4 – modified grassland, h2b – other hedgerows, r1a – eutrophic standing waters, u1 – built up areas and gardens, u1c – artificial unvegetated/unsealed surface, u1b5 – buildings, u1b6 – other developed land, w1g6 – line of trees Secondary codes: 11 – scattered trees, 48 – non-native, 362 – artificial lake or pond, 900 – small scale food growing, 1150 – flower bed, 1171 – mature tree
Protected/Notable Species, Constraints on Site Bats (various species)
HPIs and SPIs under NERC Act 2006 Brown long-eared bat
Barnsley BAP Bats

1. Summary

1.1.1 This Ecological Impact Assessment (EcIA) of the proposed development works at Dale House was commissioned by the architect Mark Booth, on behalf of the clients Daryl and Rebecca Cheetham on 2nd July 2021.

1.1.2 The survey was commissioned to inform two proposed extensions to the main dwelling (B1), one of which comprises raising the roof of an attached garage (B2). It is also proposed to construct a new extension on the west elevation of an existing detached barn (B3).

1.1.3 Ecological records were requested from Barnsley Biological Records Centre and South Yorkshire Bat Group. A UK Habitat Classification survey of the site was undertaken on 16th July 2021 with subsequent nocturnal surveys of buildings undertaken between 12th August – 7th September 2021.

1.1.4 Site habitats are not considered to be of greater than site level importance to nature conservation. The site is likely to be of up to County importance to roosting bats (CIEEM, 2021) but is not considered to be of more than site level importance to any other species group.

1.1.5 The dwelling (B1) supports a possible brown long-eared bat maternity roost (max. count 5 bats), with another brown long-eared bat day roost (1 bat) in the southwest gable. Four common pipistrelle bats, day roosting in different locations, were recorded from the roof of the dwelling, together with a single probable whiskered bat day roost in a chimney (max. count 2 bats). A single common pipistrelle day roost (1 bat) was recorded from the garage (B2) and within the barn (B3), two probable whiskered bat day roosts (max. count 2 bats) and a common pipistrelle day roost (1 bat) were recorded.

1.1.6 The proposed works are likely to result in the loss of common pipistrelle day roosts in the garage and barn, as well as the loss of one (possibly both) probable whiskered bat day roosts in the barn and loss of the brown long-eared bat day roost in the dwelling gable. Timing restrictions on elements of construction of the southern dwelling extension should enable indirect impacts on the possible brown long-eared bat maternity roost to be avoided.

1.1.7 All three of the proposed extensions will require a bat mitigation licence in order to proceed, as each will result in direct impacts on roosting bats. Given the number of roosts expected to be impacted by the scheme (expected to be four or five roosts of three species), it is anticipated that a European Protected Species (EPS) mitigation licence will be needed. A bat mitigation plan is detailed.

1.1.8 Vegetation clearance should take place at a time when it would not be expected to affect nesting birds (outside March to August). If works are to be undertaken during the typical nesting period, then they should be preceded by a nesting bird check.

1.1.9 In order to enhance the post development site, it is recommended that a single new sparrow nest box is installed within a new extension.

1.1.10 The results of this survey are considered to be valid for a period of 12 months. After this time Middleton Bell Ecology should be contacted to determine the need for update

survey.

2. Introduction

2.1.1 This Ecological Impact Assessment (EcIA) of the proposed development works at Dale House was commissioned by the architect Mark Booth, on behalf of the clients Daryl and Rebecca Cheetham on 2nd July 2021.

2.1.2 The survey was commissioned to inform two proposed extensions to the main dwelling (B1), one of which comprises raising the roof of an attached garage (B2). It is also proposed to construct a new extension on the west elevation of an existing detached barn (B3).

2.1.3 The purpose of this report is to present the findings of a UK Habitat Classification survey and a suite of nocturnal bat surveys. The report considers the ecological value of the site and presents an assessment of the impacts of the proposed development. Mitigation and compensation measures necessary to avoid or reduce these impacts are detailed.

2.1.4 Key legislation relating to designated sites, protected species and habitats is detailed in Appendix 3. The implications of legislation are detailed in the body of the report where necessary.

2.1.5 The site is located at the junction of the A635 Lane Head Road and Tivy Dale within the village of Cawthorne, approximately 6.7km west-northwest of Barnsley town centre.

3. Site Description

3.1.1 The area surveyed is approximately 0.71ha in size and comprises a large detached dwelling, barn and other associated outbuildings. Site buildings are surrounded by a mature garden including lawned areas, flower beds and extensive scattered trees, including some mature specimens. A menage is present, adjacent to the western site boundary, and a block of deciduous woodland is present on the southern boundary, adjacent to the busy A635 Lane Head Road.

3.1.2 The A635 Lane Head Road forms the site's southern boundary with the road of Tivy Dale comprising the eastern boundary. A horse pasture field and dwelling adjoin the northern boundary with other large detached dwellings and an area of woodland to the west of the site. Despite its location adjacent to two roads, quite extensive blocks of deciduous woodland are present within close proximity to the site, including immediately to the west, beyond Tivy Dale to the east and immediately south of the A635 Lane Head Road. The stream of Tanyard Beck also flows through the woodland blocks to the east of Tivy Dale and south of the A635 Lane Head Road.

3.1.3 The southern boundary of parkland associated with the large former country house of Cannon Hall is 470m northwest of the site. Away from the village of Cawthorne and the parkland of Cannon Hall, habitats in the wider area comprise predominantly mixed farmland interspersed with a quite high density of woodland.

3.1.4 The site falls within National Character Area (NCA) 38 - the Nottinghamshire, Derbyshire and Yorkshire Coalfield. This is a generally low-lying area, with hills and

escarpments above wide valleys, the landscape embraces major industrial towns and cities as well as villages and countryside. Very little of the NCA is designated for geology or nature conservation, but instead the landscape is dotted with many pockets and patches of habitat where species find refuge.

Figure 1. The site location, as indicated by red circle



4. Methodology

4.1 Data Consultation

4.1.1 Barnsley Biological Records Centre (BBRC) and South Yorkshire Bat Group (SYBG) were contacted to request the following information for locations within a 2km radius of the site:

- Protected and notable species records
- The boundaries of non-statutory designated sites of nature conservation interest

4.1.2 A search of the Multi-Agency Geographical Information for the Countryside (MAGIC) website was undertaken to determine the following:

- The boundaries of statutory designated sites of nature conservation interest
- The locations of historic European Protected Species (EPS) licences granted by Natural England

4.2 Field Survey

UK Habitat Classification Survey

4.2.1 The site was surveyed on 16th July 2021 using UK Habitat Classification habitat survey methodology (Butcher *et al*., 2020) by the following personnel:

- Robert Bell (MCIEEM)

4.2.2 Notable, rare or scarce plant species were highlighted if present. Evidence of protected species or species of nature conservation importance was recorded where present at the time of survey. Species recorded are included within the report as appropriate. Information is presented on the UK Habitat Classification plan, using Target Notes (TN) to identify particular features of interest, where appropriate.

4.2.3 Ariel photographs (Google Earth) were studied to place the site in its wider context and to look for ecological features that would not be evident on the ground during the walkover survey. This is particularly useful for identifying wildlife corridors and ponds but because the latter are often not apparent on aerial photographs, OS 1:25 000 scale maps are also used.

4.2.4 Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) are included on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 were noted together with priority species and habitats as included on the Local Biodiversity Action Plan (LBAP).

Nocturnal Surveys

4.2.5 The following personnel conducted the nocturnal surveys:

- Robert Bell (RB) (Bat Survey Class license WML-A34-Level 4, 2016-25236-CLS-CLS), Amanda Murphy (AM) (QualCIEEM; Bat Survey Class license WML-A34-Level 2, 2020-47913-CLS-CLS), Louisa Malloy (LM) (Grad CIEEM; Class license WML-A34-Level 1, 2016-22694-CLS-CLS), Dr Kate Denton (KD) (MCIEEM, Class license WML-A34-Level 4, 2018-32828-CLS-CLS) and Greg Slack (GS) (MCIEEM; Class license WML-A34-Level 4, 2017-28068-CLS-CLS)

4.2.6 The following activities were carried out in compliance with relevant Bat Survey Guidelines (Collins 2016):

- Two-person dusk emergence on B3 -12th August 2021 – RB & AM
- Four-person dusk emergence on B1 & B2 -17th August 2021 – RB, KD, LM & AM
- Three-person dusk emergence on B1, B2 (gables only) and B3 (west elevation) – 7th September 2021 - RB, GS & AM

4.2.7 During initial nocturnal surveys of those buildings to be impacted by the scheme (B1, B2 & B3, Appendix 1), the entirety of these structures were covered by surveyors and and/or cameras (see Figure 2). The reason for this was to get a more comprehensive understanding of bat roost presence in the wider vicinity of the works. During the second nocturnal survey, only those sections of the buildings to be directly or indirectly impacted by the proposed works were covered.

4.2.8 The dusk emergence surveys continued from 15 minutes prior to sunrise until 1.5 hours after this time.

4.2.9 The following equipment was used during the surveys:

- Wildlife Acoustics EM Touch bat detectors and iPad/iPod recorders
- Two to three Canon XA10 video camera and infra-red lights

4.2.10 No dawn return surveys were undertaken. The reasons for the decision to undertake dusk emergence surveys only were that use of video cameras allowed roost locations to be precisely pinpointed during dusk emergence surveys, whilst also allowing surveyors to continue surveying in very low light conditions. Furthermore, bats often return to roost during the middle of the night, resulting in dawn surveys only recording a proportion of the bats that emerged the subsequent evening. For these reasons, reliance on dusk emergence surveys was considered preferable in this instance.

4.2.11 Surveyor positions during nocturnal surveys are shown on Figure 2.

Figure 2. Nocturnal survey plan. Nocturnal surveyor and camera locations on 12th August are shown in blue, surveyor and camera locations on 17th August are shown in red with surveyor and camera locations on 7th September 2021 shown in green



4.3 Method of Assessment

4.3.1 The value and sensitivity of ecological features present on site were determined based on the guidance given in 'Guidelines on Ecological Impact Assessment' (CIEEM, 2018). Individual ecological receptors (habitats and species that could be affected by the development) for the scheme were assigned levels of importance for nature conservation. The highest level is international, then decreasing in order of importance through national, regional, county, local and lastly site.

4.3.2 The assessment of the buildings' bat roost potential is in accordance with Bat Survey Good Practice Guidelines (Collins 2016). The system of categorisation is applied using professional judgement with the habitat feature assigned a level of suitability: negligible, low, moderate or high.

4.4 Survey Limitations

4.4.1 The roof of the main house is very hard to survey due to the complex layout, height of the building and lower ground level to east of the building. The areas of the main house to be impacted by the proposed extensions can however be clearly viewed from survey positions; consequently, this limitation does not impact the understanding of scheme impacts.

5. Ecological Baseline

5.1 Designated Sites

5.1.1 Designated sites present within 2km of the site are detailed in Table 1.

Table 1. Designated sites

Designation	Name	Description	Distance and direction from site
Local Wildlife Site	Daking Brook	A largely unmodified and unpolluted watercourse which comprises a good example of an upland stream	525m northwest

5.1.2 Records of protected and notable species obtained are discussed in the species sections of the results.

5.2 Habitats

5.2.1 The arrangement of site habitats is shown on the UK Habitat plan in Appendix 1, whilst a full list of plant species recorded is provided in Appendix 2.

5.2.2 Site habitats are not considered to be of greater than site level importance to nature conservation. The site is likely to be of up to County importance to roosting bats (CIEEM, 2021) but is not considered to be of more than site level importance to any other species group.

5.2.3 A detailed description of the site and adjacent habitats and the site's potential to support protected and notable species is provided below.

Plate 1. Lawn to south of dwelling (B1)



Plate 2. Looking west across western lawn, with line of conifer trees at back of image



Plate 3. Looking north across eastern lawn



g4 – modified grassland

5.2.4 Three frequently mown lawns are present on the site, with this form of modified grassland present to the east, south and west of dwelling (B1; Appendix 1) (Plates 1-3). These lawns support frequent perennial ryegrass *Lolium perenne* and red fescue *Festuca rubra* with occasional Yorkshire fog *Holcus lanatus* and white clover *Trifolium repens*.

h2b – other hedgerows

5.2.5 An intact 2.5m high beech *Fagus sylvatica* hedge is present along much of the eastern boundary, adjacent to Tivy Dale. A stone wall is present at the base of this hedge, marking the site's eastern boundary.

r1a – eutrophic standing waters

5.2.6 A 25m^2 ornamental pond is present near the southeast corner of the site. This pond, which was built between 2016 and 2018, has a fountain and supports koi carp *Cyprinus rubrofuscus*, with a large fish of this species seen within the pond during the survey. The pond has ornamental planting along the majority of the banks with species including small acer *Acer* trees and hostas *Hosta* spp.

Plate 4. Looking west across pond



u1 – built up areas and gardens (900 small scale food growing) (1150 flower beds)

5.2.7 The borders of the lawns and the beds on either side of the Tivy Dale site entrance are intensively managed as flower beds, interspersed with trees and shrubs. To the west of the barn (B3) is an area with numerous raised beds and some fruit trees, which until recently were used for growing fruit and vegetables.

5.2.8 The ornamental beds support a very diverse range of plant species comprising species such as acer *Acer*, apple *Malus*, cherry *Prunus*, buddleia *Buddleja davidii*, olive *Olea*

europaea, lilies *Lilum*, dahlias *Dahlia*, cranesbills *Geranium*, fuchsia *Fuchsia*, rose *Rosa*, hosta, peony *Paeonia*, artichoke *Cynara*, holly hock *Alcea*, lupins *Lupinus*, red hot poker *Kniphofia uvaria*, salvia *Salvia* and montbretia *Crocosmia x crocosmiiflora*.

Plate 5. Example of ornamental border



Plate 6. Raised beds at southern corner of site, with greenhouse (B6) to rear



u1b5 - Buildings

5.2.9 Buildings on site comprise the dwelling and an adjoining garage, a barn, two outbuildings and a large greenhouse.

5.2.10 The potential importance of site buildings to roosting bats and nesting/roosting birds is discussed in the corresponding species sections of the report.

Plate 7. Looking towards the west elevation of the dwelling (B1)



u1b6 – other developed land

5.2.11 A tarmac drive enters the north end of the site from Tivy Dale (Plate 8) and continues past the west elevation of the house to the yard between the barn (B3) and outbuildings (B4 & B5). The foundations of a former conservatory (Plate 9) are also present to the south of dwelling (B1) with a number of smaller paved areas elsewhere.

Plate 8. Site entrance from Tivy Dale



Plate 9. Footprint of former conservatory, to south of B1



u1c – artificial unvegetated, unsealed surface

5.2.12 Gravel paths are present between the raised beds at the southern end of the site (Plate 6). A menage is also present at the northwest corner of the site (Plate 10).

Plate 10. Menage



w1g6 – line of trees

5.2.13 A line of mature spruce *Picea* trees (Plate 2) is present to the west of the menage.

w1h5 – other woodland; mixed; mainly broadleaved

5.2.14 On the A635 Lane Head Road embankment at the southern end of the site, is a block of woodland which includes frequent semi-mature goat willow *Salix caprea*, silver birch

Betula pendula, sycamore *Acer pseudoplatanus*, beech *Fagus sylvatica* and Scot's pine *Pinus sylvestris* with cherry laurel *Prunus laurocerasus* forming a shrub layer along the boundary (Plate 11).

Plate 11. Woodland at southern end of site



5.3 Species and Species Groups

Amphibians

5.3.1 A single recent (within 40 years) Great Crested Newt (GCN) *Triturus cristatus* record was provided by BBRC. This 2010 record related to a single female newt, seen in a greenhouse within Cannon Hall, in a location 1.1km northwest of the site. It is notable that a 2016 GCN survey of waterbodies surrounding Cannon Hall, recorded no GCN from ponds to the south of the main house (Access Ecology, 2016). The closest surveyed pond to support GCN is located 1.6km northwest of the Dale House site.

5.3.2 No GCN EPS mitigation licences have been issued for locations within 2km of the site, however, GCN Class Licence Returns dataset includes three 2016 records for locations in excess of 1.5km from the site.

5.3.3 No other ponds, not separated by a major barrier to movement (A635 Lane Head Road) are located within 500m of the site.

5.3.4 The site pond was subject to a HSI assessment as detailed in Appendix 4. This assessment showed that the pond displays poor potential to support GCN. Taking this into account, together with its age (c.5 years old) and the confirmed presence of koi carp, it is considered very unlikely that GCN would use this waterbody to breed.

5.3.5 On the basis of survey information obtained and historic records, it is considered that GCN are highly unlikely to be a receptor to the scheme.

5.3.6 A total of 49 records relating to either common frog *Rana temporaria*, common toad *Bufo bufo* or smooth newt *Lissotriton vulgaris* were provided for locations within 2km of the site by BBRC. The closest record of any of these species (a 2017 common toad record), related to a location more than 500m from the site.

5.3.7 Given the lack of potential of the site pond to support amphibians and the lack of other nearby ponds, it is considered unlikely that the site is used extensively by any amphibian species.

Badger

5.3.8 A total of eight badger *Meles meles* records were provided by BBRC for locations within 2km of the site. None of these records related to locations within 500m of the site.

5.3.9 No signs of badger presence were noted during the field survey. Badger may use the site incidentally as part of a wider foraging area, however, it is unlikely the site is of particular importance to this species.

Bats

Historic records

5.3.10 A total of 138 bat records were provided by BBRC. Species positively identified in the records included common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, whiskered bat *Myotis mystacinus* and noctule *Nyctalus noctula*. Other records were attributed to either unidentified *Pipistrellus*, *Myotis* or *Nyctalus* species, or to an unidentified bat species. The closest records to site comprised eight records of a brown long-eared bat roost, recorded from 18 Tivy Dale, approximately 85m north of the site, with the most recent record obtained in 1991. No exit counts were provided in the BBRC records.

5.3.11 A total of 144 bat records were provided by SYBG. The same species were included as detailed in the BBRC records and many of the individual records were the same. The closest records also related to 18 Tivy Dale, however, these included a 2007 roost record detailing a count of 60+ brown long-eared bats using the roost.

5.3.12 No bat European Protected Species mitigation licences have been issued for locations within 2km of the site.

Bat roost potential

5.3.13 For ease of description, site buildings are numbered as shown in Appendix 1. Full descriptions of the buildings' bat roost potential, images of the buildings and bat roost observations collected during the internal and external visual inspection are provided in Appendix 5.

5.3.14 On the basis of the internal and external visual inspection, B1 (dwelling) was considered to offer a high level of bat roost potential, B3 (barn) a moderate-high level of bat roost potential, whilst B2 (garage), B4 (outbuilding) & B5 (outbuilding) offered a low level of bat roosting potential. The greenhouse (B6) was considered to offer a negligible level of bat roost potential.

5.3.15 During the visual inspection at least three brown long-eared bats were observed roosting within the ridge tunnel in one of the B1 roof voids (Plate 11). In addition to the bats, 1000s of brown long-eared bat droppings were recorded from the same void, clustered below the ridge beam in a number of locations.

Plate 11. Brown long-eared bats roosting in ridge tunnel of B1 on 16th July 2021



5.3.16 No trees displaying a greater than negligible level of bat roost potential were noted in the survey area.

Nocturnal surveys

5.3.17 The findings of the nocturnal surveys are detailed in Appendix 6. All roost observations are summarised in Figures 3 and 4.

5.3.18 A maximum count of six brown long-eared bats were recorded emerging from the dwelling (B1) on 17th August 2021. The precise access point/s used by the bats roosting in the eastern roof void could not be located, however, they appear to be near the centre of this void. A single brown long-eared bat was also recorded roosting in the southwest gable wall of B1, in a location which may be impacted by the scheme (Plate 12) (Figure 3).

5.3.19 A total of four common pipistrelle were also recorded emerging from four different roost locations across the northwest elevation of B1 on 17th August, with two whiskered bats also recorded on this date emerging from a single roost in the central chimney (Figure 3).

5.3.20 A single common pipistrelle was recorded roosting beneath tiles at the apex of the southwest gable of the garage (B2) on 17th August (see Plate 13).

5.3.21 A total of three roost locations were recorded from the barn (B3). These roosts included a single common pipistrelle, observed emerging from a roost beneath a piece of flashing on the southwest elevation, at the junction with the lean-to extension. Two probable whiskered bats were also recorded from different roost locations, with one bat roosting below tiles on the edge of the southwest lean-to roof and a second bat roosting on the gable wall top below the southeast pitch (Plate 14). These three roosts were recorded on 7th September.

Figure 3. Roost observation summary plan – B1 & B2

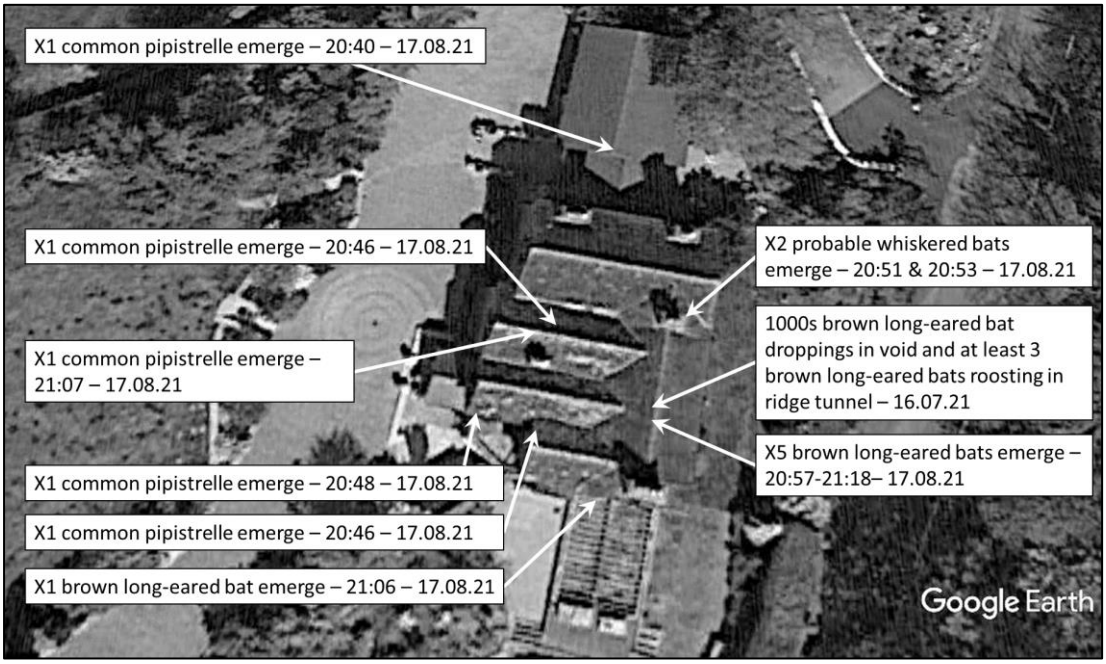


Figure 4. Roost observation summary plan - B3

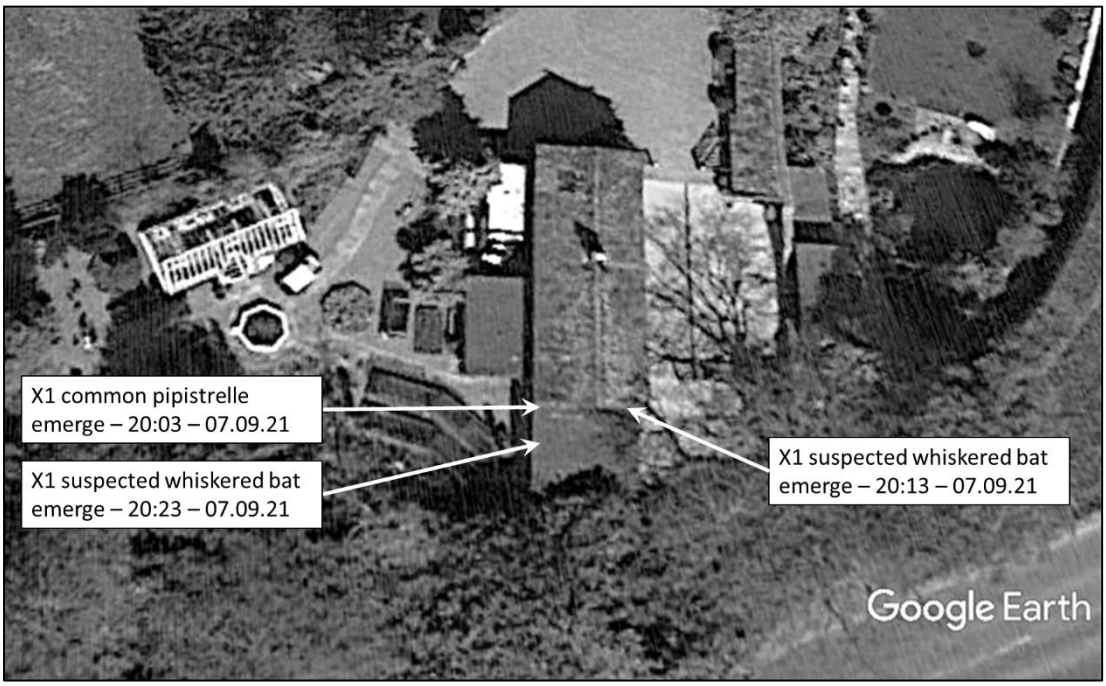


Plate 12. Brown long-eared bat roost in southwest gable of B1. Roost location indicated by red circle with bat in blue circle

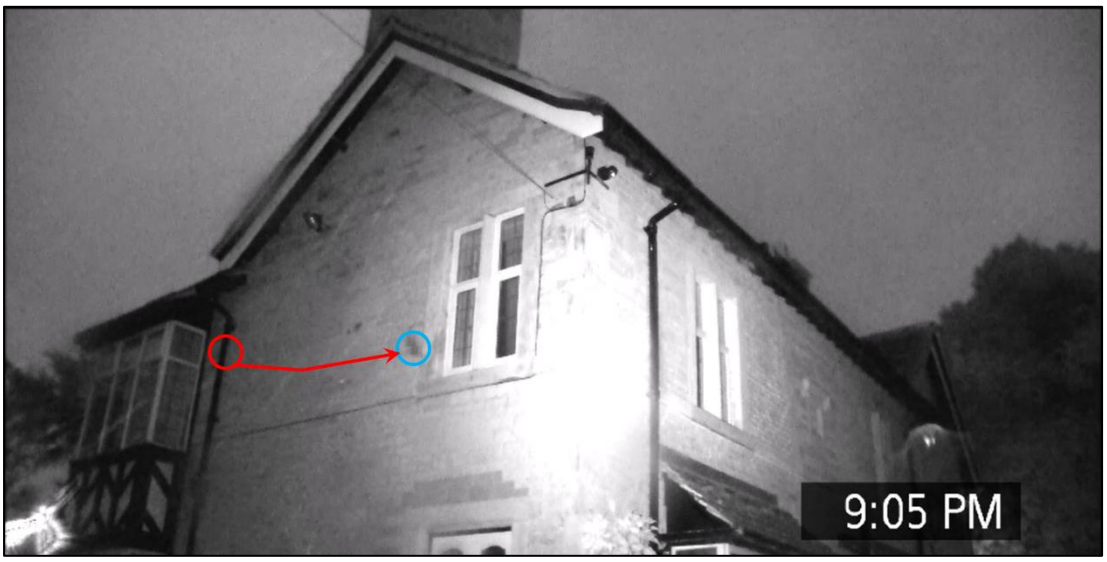


Plate 13. Common pipistrelle roost location on garage (B2). Roost location indicated by red circle with bat in blue circle



Plate 14. Roost locations recorded from barn (B3)



Foraging and commuting

5.3.22 The site comprises relatively good foraging habitat, particularly around the pond and mature trees, however the site's importance, apart from as a roosting area, is likely as a connective linkage between higher quality bat foraging habitat in the wider area.

Valuation of site importance

5.3.23 The brown long-eared bat roost in the east roof void of the dwelling (B1) may comprise a maternity roost. The number of droppings would suggest this is the case, however, the number of bats recorded roosting on 17th August (peak count 5 bats from void) is relatively low for a maternity roost, although it is noted the survey was at the end of the maternity roosting season. The data search highlighted numerous records of a large brown long-eared bat maternity roost (last count 60 bats) in a dwelling c.85m north of the site, with this roost last recorded in 2007. If the off-site roost is still present, then it is likely the B1 roost may be used by the same colony of bats and its function may be linked. In addition to the B1 roof void roost, a single brown long-eared bat was recorded emerging from a day roost in an open joint on the southwest gable.

5.3.24 The four common pipistrelle bats recorded roosting in sperate locations on the B1 roof are all considered to be day roosting, with the two probable whiskered bats in the chimney also considered to be day roosting. The common pipistrelle roost in the garage roost at the apex of the southwest gable is also considered to be a day roost.

5.3.25 Within the barn, surveys have shown the presence of two probable whiskered bat day roosts, used by a maximum count of two bats and single common pipistrelle day roost.

5.3.26 When assessing the value of the site to bats, it has been assumed that the brown long-eared bat roost in B1 comprises a maternity roost. On the basis of this assumption, it is considered that buildings on site are of up to County importance to roosting bats (CIEEM, 2021).

5.3.27 Site buildings lack cellars or areas with the cool stable and humid conditions preferred by many species of hibernating bats (i.e. whiskered bat), however, pipistrelle and to a lesser extent brown long-eared bat will over winter in a wide range of locations. For this reason, usage of site buildings by pipistrelle and brown long-eared bat over the winter period cannot be ruled out.

Birds

No historic bird records have been supplied for the site itself. Blackbird *Turdus merula* and kestrel *Falco tinnunculus* were recorded during the site survey. The buildings, many of the shrubs and all trees display potential for use as nesting habitat by common and widespread species including several summer migrants.

Reptiles

5.3.28 No reptile records were provided for locations within 2km of the site by BBRC. The site lacks much suitable reptile habitat and reptiles are not considered a likely receptor to the proposed scheme.

Invasive species

5.3.29 Montbretia is included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and is present within the ornamental planting on site.

Invertebrates

5.3.30 The site supports a range of ubiquitous habitats of limited extent and consequently rarely occurring invertebrate species are unlikely to be present.

Plants

5.3.31 The habitats present do not include long-established unimproved grasslands, ancient woodlands, species rich hedgerows or other diverse botanical communities. Therefore, protected or priority plants are unlikely to be present.

Table 3. Ecological importance of each habitat, species or species group on site and adjacent

Habitat, Species or Species Group	Ecological value
g4 – modified grassland	Site
h2b – other hedgerows	Site
r1a – eutrophic standing waters	Site
u1 – built up areas and gardens	Site
u1c – artificial unvegetated/unsealed surface	Site
u1b5 – buildings	Site
u1b6 – Other developed land	Site
w1g6 – line of trees	Site
Amphibians	Site (if present)
Badger	Unlikely to be present
Bats	**County**
Birds	Site
Invasive species	Present (montbretia)
Invertebrates	Site
Plants	Site
Reptiles	Unlikely to be present

6. Assessment

6.1 Proposals

6.1.1 The proposals include the construction of three extensions to the existing site buildings. It is understood that these proposals include raising the height of the garage (B2) roof to redevelop this building to two-storey, however, it is not anticipated the footprint of this building would change. At the southwest end of the dwelling (B1), a new two-storey extension is proposed. This extension will be built on the existing concrete footprint of a former conservatory.

6.1.2 A new swimming pool extension will be constructed on the western corner of the barn (B3), enveloping parts of the southwest gable and the northwest elevation. The

footprint of this new building will largely comprise the raised beds and gravel paths of the former fruit and vegetable growing area.

6.2 Assessment of Impacts

Designated sites

6.2.1 No impacts are anticipated upon designated sites due to the nature of the development and the distance of designated sites from the application area.

Habitats

6.2.2 Habitat loss as a result of the development will be minimal, with the habitats to be lost predominantly comprising raised beds and gravel paths, of little ecological interest.

Species

Bats

6.2.3 The only species impacts of consequence will be on roosting bats. Of roosts recorded during the survey works, those likely to experience direct impacts as a result of the scheme comprise the brown long-eared bat day roost on the southwest gable of the dwelling (B1), the common pipistrelle day roost on the garage (B2), the common pipistrelle day roost on the barn (B3) and at least one of the two probable whiskered bat day roosts in the barn. It is likely that most or all of these roost locations will be lost during construction.

6.2.4 Direct impacts of the scheme on the possible brown long-eared bat maternity roost in B1 are considered very unlikely to occur. There is however potential for the construction of the southern dwelling extension to indirectly impact this roost through noise or vibration impacts during construction, if key works (i.e. noisy works above first floor level) are not timed to avoid the bat maternity period (May-August). In addition, care needs to be taken to minimise new site lighting within existing dark areas, in order to avoid reducing the site's appeal to light sensitive bat species, including brown long-eared bat and whiskered bat.

6.2.5 It is not considered that the common pipistrelle or probable whiskered bat day roosts in the dwelling (B1) will be impacted by the scheme

Birds

6.2.6 Construction of the swimming pool is likely to require removal of several small fruit trees. These trees may be used by nesting birds and consequently care should be taken to ensure no active nests are present at the time tree removal works are carried out.

Other species

6.2.7 The specimen of montbretia, an invasive plant included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) will not be impacted by the proposed scheme.

6.2.8 No impacts upon other notable floral or faunal species as a result of the scheme are foreseen

6.3 Further Survey, Licensing and Mitigation

Bats

Bat licensing

6.3.1 All three of the proposed extensions will require a bat mitigation licence in order to proceed, as each will result in direct impacts on roosting bats. Given the number of roosts expected to be impacted by the scheme (expected to be four or five roosts of three species), it is anticipated that an EPS mitigation licence will be required. An EPS mitigation licence application can only be submitted once planning permission has been granted and any nature conservation related planning conditions have been discharged. Natural England currently take up to 45 working days to determine EPS licence applications. It would be preferable to include all three extensions on a single EPS licence application.

6.3.2 It is considered that bat survey information obtained to-date would provide a reasonable basis for an EPS licence application, if submitted in advance of Summer 2022. It should however be noted that Natural England typically require at least some of the nocturnal survey work to have been undertaken during the most recent survey season. Consequently, further update survey may be required in instances where there is a delay between the original bat surveys being undertaken and the application for a bat mitigation licence.

Works timings

6.3.3 The construction of the southern extension to the dwelling (B1) should be timed to ensure those external construction works to be undertaken above ground floor height occur outside the bat maternity roosting period (May-August). This precaution will help ensure indirect noise and vibration impacts on the brown long-eared bat roost in the roof void of B1 are avoided.

6.3.4 As a precaution, it is also recommended that all licensable works (i.e. roost destruction or disturbance works), take place outside the core bat hibernation period (November – February inclusive).

Avoidance of killing or injuring bats during construction

6.3.5 Prior to works commencing, the building should be re-inspected by a licensed bat surveyor and the contractors subject to a Toolbox Talk. In order to avoid killing or injuring roosting bats during construction, all works to known or suspected bat roost locations will need to be overseen by a licensed bat ecologist. The bat ecologist should assist with the supervised removal of roof materials (where required) and should exclude bats from roosts within walls, which cannot be safely stripped. Exclusion of bats should be undertaken during the bat activity period using one-way bat exclusion devices. Any bats captured should be subject to a health check before being placed in a release box, to be attached to a site tree.

Long-term roost mitigation

6.3.6 New roofs, to be covered by stone or artificial stone roof slates should be lined with hessian backed Type 1F felt bituminous felt only, with no Non-Bitumen Coated Roofing Membranes to be used in any location. Non-Bitumen Coated Roofing Membranes

have been shown to cause the death of roosting bats as they can become entangled within the component filaments of these new woven materials. It is for this reason that Natural England do not allow the installation of NBCRM in connection with bat licence works.

6.3.7 In addition to the use of hessian backed Type 1F felt bituminous felt, three new bat roost locations should be created in one or more of the new extensions. These roost locations may comprise either integrated bat boxes in new walls (Plates 15-17), or 50mm spaces created between slates/tiles, allowing access to the space between slate/tiles and underfelt (Plate 18). If integrated boxes are installed, then these should be at wall top height, with two of the three boxes on a south or west elevation. If spaces are created between tiles, these should be in the mid-pitch with two of the three spaces on a southerly roof pitch.

Plates 15-17. Build-in bat roost products



Plate 18. Creation of access point between stone slates



6.3.8 It is advised that new artificial external lighting should be avoided where possible. In particular, new artificial lighting should avoid light spill on tree and shrub vegetation, particularly to the southeast of the dwelling (B1) and woodland to the south of the barn (B3).

Birds

6.3.9 Vegetation clearance should take place at a time when it would not be expected to affect nesting birds (outside March to August). If works are to be undertaken during the typical nesting period, then they should be preceded by a nesting bird check.

6.4 Enhancements

6.4.1 In accordance with the aims of planning policy NPPF: 15, it is suggested that the developer follows the recommendations detailed below. Please note that the enhancements have been informed by the results and findings of the field survey.

- One house sparrow terrace to be integrated within, or attached to, the wall of one of the new extensions.

6.5 Conclusion

6.5.1 A bat mitigation licence will be needed to permit all three of the proposed new extensions.

6.5.2 In order to further reduce scheme impacts and to ensure the scheme maximises potential benefits to nature conservation, it is recommended that mitigation and enhancement measures detailed in Sections 6.3 and 6.4 are adopted.

6.5.3 The results of this survey are considered to be valid for a period of 12 months. After this time Middleton Bell Ecology should be contacted to determine the need for update survey.

7. References

Access Ecology (2016) Cannon Hall Park GCN Survey Report. Access Ecology Ltd, Sheffield.

Butcher B, Carey P, Edmonds R, Norton L & J Treweek (2020) The UK Habitat Classification User Manuals Version 1.1 at http://www.ukhab.org/

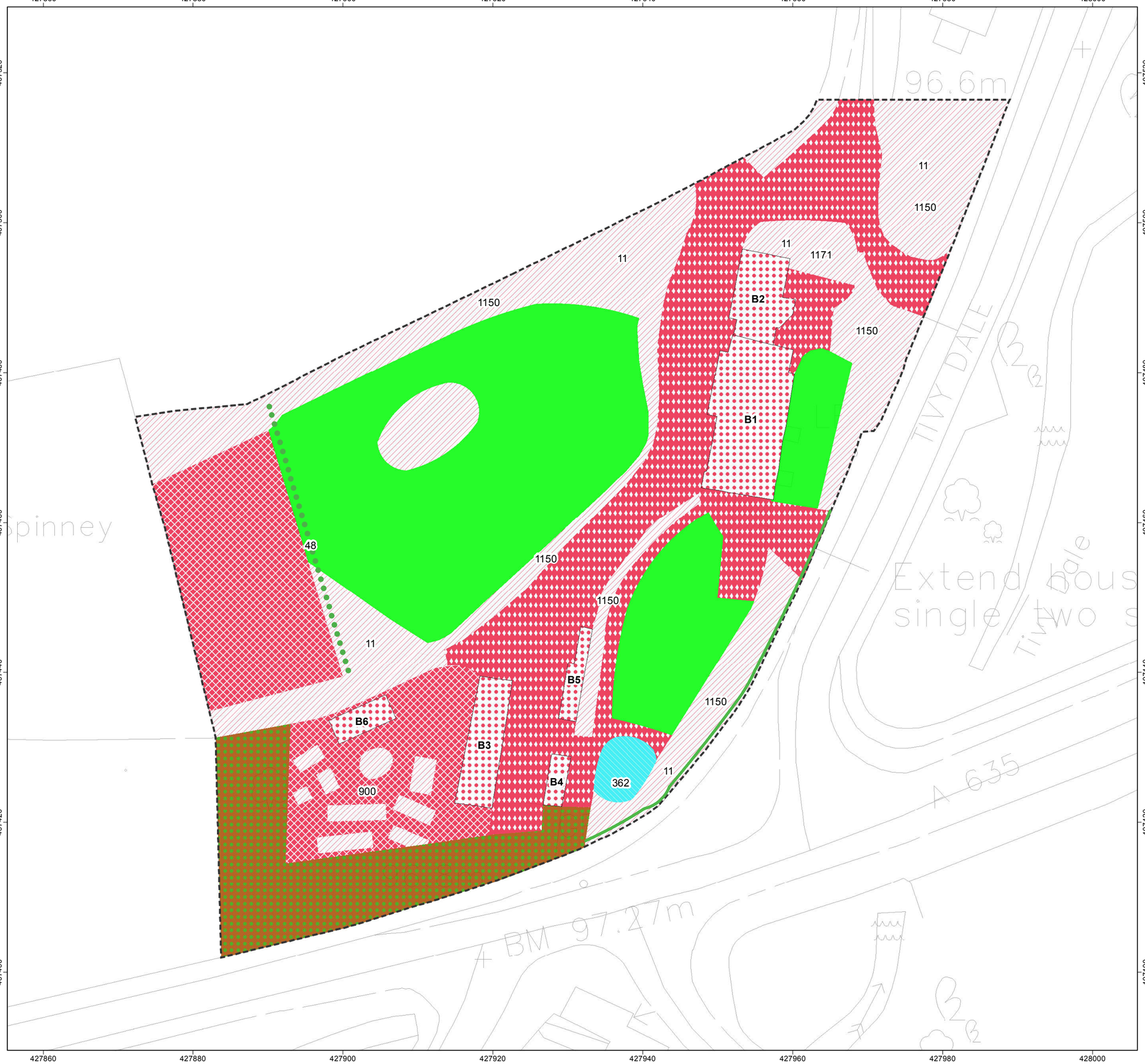
Collins J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. The Bat Conservation Trust.

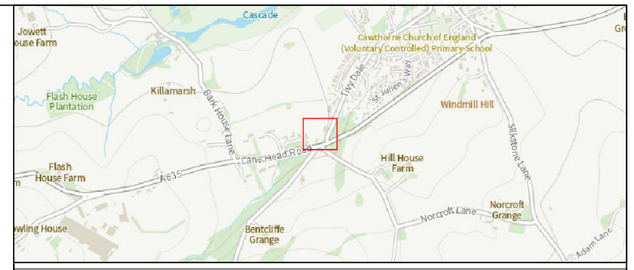
CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2021) Bat Mitigation Guidelines: A Guide to Impact Assessment, Mitigation and Compensation for Developments Affecting Bats Version 1.0. CIEEM.

Appendix 1. UK Habitat Classification Plan





Survey Information	
	Site boundary (7,140.2m^2)
UK Habitat Survey (Primary Habitats)	
	g4 - Modified grassland (1,814.0m^2)
	r1a - Eutrophic standing waters (54.6m^2)
	u1 - Built-up areas and gardens (1,869.4m^2)
	u1b5 - Buildings (428.3m^2)
	u1b6 - Other developed land (1,430.7m^2)
	u1c - Artificial unvegetated, unsealed surface (960.9m^2)
	w1h5 - Other woodland; mixed; mainly broadleaved (582.3m^2)
	h2b - Other hedgerows (56.4m)
	w1g6 - Line of trees (36.9m)

Secondary codes:

11 - Scattered trees
48 - Non-native
362 - Artificial lake or pond
900 - Small-scale food growing
1150 - Flower bed
1171 - Mature tree

Source:
Ordnance Survey © Crown copyright 2021, All rights reserved. License Number 100049837.

N

0 2.5 5 10
Metres

PROJECT TITLE

DALE HOUSE, CAWTHORNE

DRAWING TITLE

Figure 1. UK Habitat Survey Plan

VER	DATE	REMARKS	Drawn	Checked
1.0	06/09/21	UKHab	MP	RB

DRAWING NUMBER:
MIDDLETONBELLECOLOGY/DaleHouse/UKHab

SCALE	1:500	PLOT SIZE	A3	DATUM	OSGB	PROJECTION	BNG

Middleton Bell Ecology
33 Wilthorpe Road, Barnsley, South Yorkshire, S75 1JA
www.middletonbellecology.co.uk
T: 01226 286282

Appendix 2. Plant Species Recorded on Site

D = Dominant, **A** = Abundant, **F** = Frequent, **O** = Occasional, **R** = Rare

g4 – modified grassland

Common name	Taxon	Abundance
Perennial rye grass	*Lolium perenne*	F
Red fescue	*Festuca rubra*	F
Yorkshire fog	*Holcus lanatus*	O
White clover	*Trifolium repens*	O

h2b – other hedgerows

Common name	Taxon	Abundance
Beech	*Fagus sylvatica*	D

u1 – built up areas and gardens (900 small scale food growing)(1150 flower beds)

Common name	Taxon	Abundance
Acer	*Acer* spp.	O
Apple	*Malus* spp.	O
Cherry	*Prunus* spp.	O
Buddleia	*Buddleja davidii*	O
Olive	*Olea europaea*	O
Lilies	*Lilum* spp.	O
Dahlia	*Dahlia* spp.	O
Cranesbill	*Geranium* spp.	O
Fuschia	*Fuchsia* spp.	O
Rose	*Rosa* spp.	O
Peony	*Paeonia* spp.	O
Artichoke	*Cynara* spp.	O
Holly hock	*Alcea* spp.	O
Lupins	*Lupinus* spp.	O
Red hot poker	*Kniphofia uvaria*	O
Salvia	*Salvia* spp.	O
Montbretia	*Crocosmia x crocosmiiflora*	O

w1h5 – other woodland; mixed; mainly broadleaved

Common name	Taxon	Abundance
Goat willow	*Salix caprea*	F
Silver birch	*Betula pendula*	F
Sycamore	*Acer pseudoplatanus*	F
Beech	*Fagus sylvatica*	F
Scot's pine	*Pinus sylvestris*	O
Cherry laurel	*Prunus laurocerasus*	F

Appendix 3. Relevant Legislation and Planning Policy

Wildlife legislation relating to statutory designated sites and species is summarised in Table A1 and A2 below. This legal information is intended for summary only, and the original legal documents should be consulted if a detailed understanding is required.

Table A1. Legislation relating to designated sites and habitats

Designated Site	Legal Status
Local Wildlife Site (LWS)	While they have no direct legal status, Local Wildlife Sites are considered important enough to receive recognition within the planning system. National planning policy requires local authorities to identify Local Wildlife Sites and provide for their protection through local policy.

Table A2. Legislation relating to species

Species	Legal Status
European protection	
European Protected Species (EPS) (including bats, Great Crested Newt (GCN), otter and hazel dormouse)	These animal species and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species Regulations 2017, which makes it illegal to: • Intentionally or deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs. • Deliberately disturb such an animal. • Damage or destroy a breeding site or resting place of such an animal. European Protected Species (EPS) licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed: • The development is for reasons of overriding public interest. • There is no satisfactory alternative; and • The favourable conservation status of the species concerned will be maintained and/or enhanced. Under Regulation 9(5) of the Conservation Regulations, Planning Authorities have a legal duty to 'have regard to the requirements of the EC Habitats Directive in the exercise of their functions'. This means that they must consider the above 3 tests when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed. Natural England also allow sites to be registered on the Bat Low Impact Class Licence to permit activities that would otherwise be unlawful under the Conservation Regulations where the 3 tests can be passed and the bat roosts to be impacted are of low conservation status.

Species	Legal Status
National protection	
European Protected Species and other species including water vole and white clawed crayfish	These animals receive full protection 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 such animal. • Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; and • Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.
Common amphibians and reptile species	These animals receive limited protection under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal to intentionally kill or injure any such animal.
Badger	The Protection of Badgers Act 1992 makes it illegal to wilfully kill or injure a Badger or attempt to do so and also make it illegal to intentionally or recklessly interfere with a Badger sett. This includes damaging or destroying a sett, obstructing access to a sett and disturbing a Badger while it is occupying a sett. Licences can be granted by Natural England to permit sett closure and/or disturbance between July and November inclusive.
Schedule 1 birds	Special penalties relate to offences concerning birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). In addition to the offences detailed above relating to all wild birds, it is illegal to intentionally or recklessly disturb any Schedule 1 bird or their dependent young while nesting.
All bird species	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.
Invasive species	The Wildlife and Countryside Act 1981 (as amended) contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 of the Act. In relation to Schedule 9 plants, it is an offence to plant or otherwise cause these plant species to grow in the wild.

Species and Habitats of Principal Importance

Planning authorities have a duty under Section 40 of the NERC Act 2006 to have regard to priority species and habitats in exercising their functions including development control and planning. In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is known as the list of Habitats and Species of Principal Importance (HPI/SPI). The HPI/SPI list is used to guide planning authorities in implementing their duty under the NERC Act.

National Planning Policy Framework

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'. It also puts an emphasis on refusing development which would result in the 'loss or deterioration of irreplaceable habitats (such as ancient woodland)' unless there are 'wholly exceptional reasons and a suitable mitigation strategy exists'.

Local Biodiversity Action Plans

The HPI/SPI list included on Section 41 of the NERC Act 2006 is supported by a series of Local Biodiversity Action Plans (LBAPs), usually set up on a local authority local authority administrative boundary basis. Each LBAP identifies those habitats and species considered to be most important in that area (usually referred to as priority habitats and species). Commonly, an LBAP will identify a number of habitats and species for which "action plans" have been prepared.

Appendix 4. GCN HSI Assessment

Location	Pond Area	Pond Drying	Water Quality	Shade	Fowl	Fish	Ponds	Terrestrial Habitat	Macrophytes	HSI	Suitability
Zone A	<50m2	Never Dries	Poor	0-60%	Absent	Major	9	Moderate	6-10%	0.359	Poor

Appendix 5. Building Descriptions and Images

Building 1 - Dwelling

General description

7.1.1 Building 1 comprises a large detached two-storey stone house, originally constructed in 1891 (Plates A5.1 & A5.2). The building has a multi-pitched stone-slate covered roof with clay ridge tiles and three stone chimneys. A single-storey porch with a pitched roof adjoins the northwest elevation, with the single-storey garage (B2) adjoining the northeast elevation. The building has six first-floor gables, all with overhanging eaves, mortar-filled verges and timber barge boards. Lead flashing is present in places and mock-Tudor paneling is present on a bay window on the southwest gable (Plate A5.2). The northwest elevation appears to have been extensively repaired or extended within the last 20 years, with stonework in this area both clean and in good condition. Windows in the buildings are uPVC framed and double glazed. Two arrow-slit style openings are present in gables close to the apex (Plate A5.1).

Plate A5.1. West corner of B1, with B2 (garage) to left of image



Plate A5.2. Southeast gable of B1



External bat roost opportunities

7.1.2 In common with other roofs of this type, the stone roof slates offer many potential bat roosting opportunities between slates of uneven widths, with these crevice openings also potentially allowing access into roof voids. No areas of missing ridge or verge mortaring were however recorded.

7.1.3 Pointing between stonework on the walls is generally in good condition, however, several open joints were noted in the southwest gable near the drainpipe (Plate A5.2).

Internal inspection

7.1.4 Building 1 has five roof voids (Plates A5.3 & A5.4), of which four are interconnected with the northern roof void boarded out and used for storage (Plate A5.4). These voids are between 1.2 and 2.5m high and are suspended on king-post trusses (where present), purlins, rafters, ridge beams and laths.

7.1.5 The northern roof void is 2.5m high, is boarded out, has plywood sarking and a skylight (Plate A5.4) and is actively used for storage. No signs of bats were recorded from this void.

7.1.6 The eastern roof void (Plate A5.3) is 2m high, with the roof mainly unlined beneath the stone slates, although breathable roof membrane is present in places. This void extends from the northern void to the southwestern gable. This void has c.100mm of glass fibre insulation on the ceiling with thousands of mixed-age brown long-eared bat droppings deposited upon this insulation, mainly clustered in several locations beneath the ridge. A cluster of at least three brown long-eared bats was recorded within the ridge tunnel (between ridge tiles and ridge beam) in the centre of this void, at the time of inspection (Plate A5.5). A large and active wasp nest was also recorded from this void.

7.1.7 Three 1.2m high roof voids, lead northwest from the eastern roof void and are connected to it internally. One of these roof voids has chipboard sarking, with two voids lined with breathable roofing membrane; all have glass fibre insulation on the ceilings. Occasional brown long-eared droppings were recorded from these three voids, however, it did not appear that brown long-eared bats used them with any regularity.

7.1.8 Building 1 is considered to display high bat roost potential

Plate A5.3. Looking north up eastern roof void. This is the void which supports the brown long-eared bat roost



Plate A5.4. Interior of northern roof void in B1



Plate A5.5. Brown long-eared bats roosting in ridge tunnel of western roof void in B1 on 16.07.21



Plate A5.6. Dropping cluster in eastern roof void of B1



Plate A5.7. West elevation of B2 (garage), with open-sided passage to B1 on right of image



Building 2 - Garage

General description

7.1.9 Building 2 comprises a modern single-storey stone-faced double garage with a pitched imitation-stone roof. This building has two gables with overhanging eaves and wooden barge and fascia boards. Two polycarbonate up-and-over doors are present in the northwest elevation. The garage has uPVC gutters and is connected to B1 vie an open-sided passage (Plate A5.7).

Plate A5.8. Northeast gable of garage



External bat roost opportunities

7.1.10 Potential bat access points are present between the roof tiles, particularly on the verges as a result of the sloping edges to these tiles.

Internal inspection

7.1.11 The roof void of B2 is lined with a breathable roof membrane and is suspended on modern prefabricated roof trusses. No signs of bats or potential bat access points were noted within this void.

7.1.12 Building 2 is considered to offer low bat roost potential.

Building 3 - Barn

General description

7.1.13 Building 3 comprises a C19th two-storey brick-built barn with a pitched stone-slate covered roof with clay ridge tiles (Plates A5.9 & A5.10). Two extensions are present. These extensions comprise a modern brick single-storey lean-to with a single-pitch concrete tiled roof and wood soffits on the northwest elevation, and an open-sided timber-framed single-storey lean-to with a single-pitch concrete tiled roof on the southwest gable.

7.1.14 The original barn has large wooden double doors on the southeast elevation with single

wooden doors elsewhere on the building. The original building has single-pane wood-framed windows whilst the extension has uPVC double-glazed windows. Stone quoins are presented on the corners of the original barn, with a brick chimney in the centre of the roof. Lead flashing is present in several places on the building. A barn owl *Tyto alba* box is attached to the southwest gable.

Plate A5.9. Eastern corner of B3 (barn)



Plate A5.10. Western corner of B3 (barn)



External bat roost opportunities

7.1.15 On the exterior of B3 there are numerous crevice openings between both the stone slates and concrete tiles, particularly on gables. In addition, there is potential bat

access to wall tops, particularly on the original building and lifted flashing at the base of the chimney and between the southeast extension's roof and the adjacent brick wall.

7.1.16 No evidence of bird use was recorded from the barn owl box during a direct inspection.

Plate A5.11. Interior of B3



Internal inspection

7.1.17 The northern half of the barn has a roof underlined with wood sarking with no void present and whitewashed walls. The roof is suspended on a modified king-post truss, purlins, a ridge beam, rafters and laths. A skylight is present, with the window in the gable also resulting in a room with high light levels. No signs of bats were noted.

7.1.18 The southern half of the barn has an unlined roof, with back-pointing/torching on the back of slates. The roof is suspended on a king-post truss, purlins, rafters, a ridge beam and laths. No roof-void is present and a gable window lets light into the room. No signs of bat presence were noted internally.

7.1.19 Building 3 is considered to offer a moderate to high level of bat roost potential.

<u>Building 4 – Hay store</u>

General description

7.1.20 Building 4 comprises a timber-framed hay store with a pitched concrete-tile covered roof. The building has hit-and-miss wood paneling with a permanent opening in the northwest elevation.

External bat roost opportunities

7.1.21 Bats may roost between tiles, particularly at the verges.

Internal inspection

7.1.22 No voids present. The roof is lined with wood sarking with a swallow *Hirundo rustica* nest present, but no signs of bats were found.

7.1.23 Building 4 is considered to offer low bat roosting potential.

Plate A5.12. Building 5 on left of image with B4 on right



Building 5 – Garden Store

General description

7.1.24 Building 5 comprises a lean-to single-storey brick-built store, constructed against the adjacent wall (Plate A5.12). The stone-late covered roof is single-pitched with stone coping at the southwest end and a mortar-filled verge at the northeast end. Lead flashing is present at the upper edge of the roof with a wood fascia-board. Wood-framed single-pane windows and a wooden door are present.

External bat roost opportunities

7.1.25 Bats may roost between tiles, particularly at the verge.

Internal inspection

7.1.26 The roof is lined with a breathable roof membrane with no void present. The roof is suspended on a purlin, rafters and laths with no signs of bats present internally.

7.1.27 Building 5 is considered to offer low bat roosting potential.

Building 6 – Greenhouse

General description

7.1.28 Building 6 comprises a large wooden-framed and glazed conservatory/greenhouse, with low height brick walls. This building is considered to display negligible bat roosting

potential.

Plate A5.13. Building 6 (greenhouse)



Appendix 6. Nocturnal Survey Results By Building

Weather during nocturnal surveys

12th August 2020 – dusk emergence

7.1.29 Sunset was at 20:42 and the temperature at the beginning of monitoring was 17ºC, with a light breeze (Beaufort Scale Force 2), no rain and 0% cloud. The temperature dropped to 14ºC by the end of the survey and cloud cover increased to 10%. The wind level remained constant.

17th August 2020 – dusk emergence

7.1.30 Sunset was at 20:27 and the temperature at the beginning of monitoring was 16ºC, with a light wind (Beaufort Scale Force 3), no rain and 100% cloud. The temperature dropped to 15ºC by the end of the survey whilst other weather conditions remained the same.

7th September 2021 – dusk emergence

7.1.31 Sunset was at 19:43 and the temperature at the beginning of monitoring was 23ºC, with no wind and 0% cloud. The temperature dropped to 21ºC by the end of the survey whilst other weather conditions remained the same.

Survey observations by building

Building 1

17th August 2021 - dusk emergence

7.1.32 The first bats recorded comprised two common pipistrelles, recorded emerging from locations beneath roof tiles at either end of the northwest elevation of B1, at 20:46 (19 minutes after sunset) (Figure 3). Two further common pipistrelle bats were recorded emerging from other locations near the centre of the northwest elevation at 20:48 and 21:07.

7.1.33 At 20:51 (24 minutes after sunset) and 20:53, two bats of a *Myotis* species thought likely to be whiskered bats, were recorded emerging from the top of the central chimney (Plate A6.1). This species identification is based mainly on time of emergence and roost location.

7.1.34 Between 20:57 and 21:18 a total of five brown long-eared bats were recorded emerging from the eastern roof void of B1. The access point or more likely the multiple access points used could not be accurately recorded from ground level due to restricted sight lines, however, these bats were clearly recorded commuting from the roof.

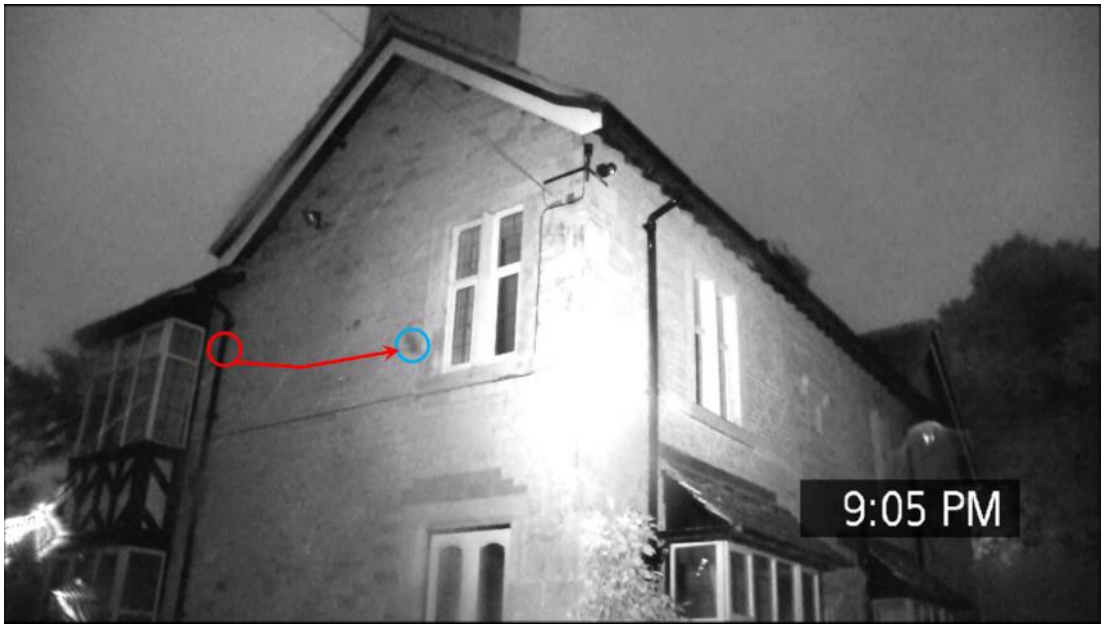
7.1.35 At 21:05 a single brown long-eared bat was recorded emerging from a roost location comprising an open joint near the gutter on the southwest gable of B1, with this roost accurately recorded with the aid of video footage (Plate A6.2).

7.1.36 No further bat roosting activity was recorded from B1 during this survey.

Plate A6.1. Whiskered bat emerging from chimney roost on B1 on 17.08.21. Blue circle shows bat and red circle shows roost location



Plate A6.2. Brown long-eared bat roost location in southwest gable. Blue circle shows bat and red circle shows roost location



7th September 2021 – dusk emergence

7.1.37 No bat roosting activity was recorded during this survey, which targeted only those sections of B1 to be directly or indirectly impacted by the proposed scheme.

7.1.38 The first bat recorded comprised a noctule, head by both surveyors at 19:37 (5 minutes before sunset). The first common pipistrelle was recorded commuting in an easterly direction past the south gable at 20:00 with intermittent activity recorded from this

species thereafter. The first brown long-eared bat was heard at 20:30 with five further passes noted. A bat of a *Myotis* species was heard to the north of B1 at 20:54.

Building 2

17th August 2021 - dusk emergence

7.1.39 At 20:40, a common pipistrelle was recorded emerging from the apex of the southwest gable of the garage (Plate A6.3). This comprises the first bat recorded during the survey.

7.1.40 The majority of the other bat activity recorded during this survey related to bat roosting activity in B1, as recorded in Sections 7.1.31-7.1.34.

Plate A6.3. Common pipistrelle roost location in southwest gable of garage (B2). Blue circle shows bat and red circle shows roost location



7th September 2021 – dusk emergence

7.1.41 No bat roosting activity was recorded during this survey.

Building 3

12th August 2021 - dusk emergence

7.1.42 No bat roosting activity was recorded during this survey.

7.1.43 The first bat recorded comprises a common pipistrelle heard to the south of B3 at 20:11. Thereafter intermittent common pipistrelle activity was recorded with three Leisler's bat *Nyctalus leisleri* passes recorded from 21:23. Several *Myotis* bat passes were noted from 21:24, with a soprano pipistrelle pass at 21:20 and two brown long-eared bat passes at 21:39 & 21:48.

7th September 2021 – dusk emergence

7.1.44 At 20:03, a single common pipistrelle bat emerged from a roost location beneath flashing at the junction of the lean-to and the southwest gable (Plate A6.4). At 20:12 (29 minutes after sunset) a probable whiskered bat (on basis of echolocation call and time of emergence) was recorded emerging from the eaves of the southwest gable (Plate A6.4). This was followed by a second probable whiskered bat, which emerged from the verge of the lean-to roof of the southwest extension at 20:23. This bat was identified on the basis of echolocation call characteristics (a steep slope, high start point and single kink - Plate A6.6).

7.1.45 Occasional passes by noctule, soprano pipistrelle and brown long-eared bat were also recorded during this survey.

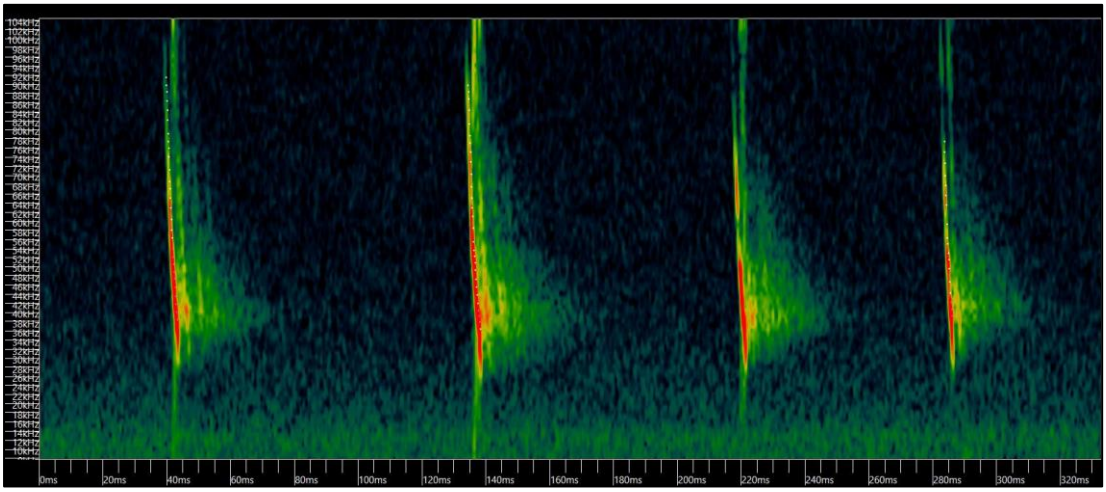
Plate A6.4. Building 3 roost locations. Probable whiskered bat roosts indicated by red circles, with a common pipistrelle roost indicated by a green circle



Plate A6.5. Probable whiskered bat emerging from B3. Blue circle shows bat and red circle shows roost location



Plate A6.6. Echolocation call recorded from probable whiskered bat which emerged at 20:23 on 07.09.21



Appendix 7. Bat Records

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 Ref.	Notes
16/07/2021	Brown long-eared bat	Dale House, Tivy Dale, Cawthorne	SE 27952 07475	Possible maternity roost. At least three bats and thousands of droppings in house.
17/08/2021	Common pipistrelle	Dale House, Tivy Dale, Cawthorne	SE 27952 07475	Five bats in separate day roost locations across house and garage
17/08/2021	Probable whiskered bat	Dale House, Tivy Dale, Cawthorne	SE 27952 07475	Two bats in day roost in house
17/08/2021	Brown long-eared bat	Dale House, Tivy Dale, Cawthorne	SE 27952 07475	Total of six bats recorded emerging from roosts in house
07/09/2021	Noctule	Dale House, Tivy Dale, Cawthorne	SE 27952 07475	Pass
12/08/2021	Leisler's bat	Dale House, Tivy Dale, Cawthorne	SE 27917 07433	Pass
12/08/2021	Soprano pipistrelle	Dale House, Tivy Dale, Cawthorne	SE 27917 07433	Pass
07/09/2021	Probable whiskered bat	Dale House, Tivy Dale, Cawthorne	SE 27917 07433	Two bats emerged from separate day roosts
07/09/2021	Common pipistrelle	Dale House, Tivy Dale, Cawthorne	SE 27917 07433	One bat from day roost