Little Dudlands Farm, Rimmington Lane, Clitheroe, BB7 4EA

Bat, Barn Owl & Breeding Bird Survey & Assessment

Sept 2013 (released Jan 2014)

Ribble Ecology ref: RB-13-137
Prepared by: Ms G Coar BSc (Hons) & Ms L Bousfield BSc (Hons) MCIEEM
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Ribble Ecology
20 Hall Road
Fulwood
Preston
PR2 9QD
www.ribbleecology.co.uk

Ribble Ecology
20 Hall Road, Fulwood, Preston, PR2 9QD
07887 532666 mail@ribbleecology.co.uk

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A SUMMARY

This report presents the results of ecological survey and assessment work that has been undertaken for **barns at Little Dudlands Farm, Rimmington Lane, near Clitheroe**.

The survey work was commissioned in September 2013, in preparation for a planning application to convert the barns into one or more residential properties. At the time of this ensuing report being released in January 2014, the proposals have shown an intention to create three dwellings, each with nearby detached garages and associated garden curtilages.

The scope of the survey and assessment has given consideration to the presence of absence of roosting and/or hibernating bats, Barn owl and nesting birds. It has additionally assessed the potential value for foraging and/or committing bats.

The survey work has identified *potential habitat value* for roosting bats in association with the building's roofs, along with evidence of **1x roosting Common pipistrelle and 1x probable roosting Myotis species** at the time of the nocturnal survey.

Additionally there are Swallow nests associated with the buildings, plus evidence of former use by Wren and Blackbird, plus there is potential value for roosting Barn owl, though no evidence of Barn owl has been detected during the surveys.

The presence of confirmed bat roosts indicates that a **European Protected Species (EPS) Mitigation licence is required** in order to undertake any proposed redevelopment work affecting the two barns at Little Dudlands Farm. The work will have to be undertaken in accord with an **EPS Method Statement**, which must demonstrate how bats can be protected during the work and how roost habitat can be reinstated as part of the proposal. **Sections E** and **F** provide further information accordingly.

B INTRODUCTION

B.1 Background to proposed activity/ development/ works on site

The farmstead of Little Dudlands Farm incorporates a detached house, two large and traditionally-built stone barns (structurally adjoining each other), a complex of large and portal-framed farm barns and additionally several smaller buildings that are of varied construction types.

There is a proposal to convert the two large stone-walled barns into residential properties, with associated loss and/or adjustment to smaller buildings as well. This work will form the subject of a planning application and since there will be substantial loss and/or alteration to buildings, this prompts the legal requirement to consider potential impacts on protected wildlife, specifically bats, Barn owl and nesting birds.

Note that no proposals drawings were supplied at the time of Ribble Ecology being commissioned (September 2013), thus the scope of work was based on a general understanding as to which barns would be converted. Proposals drawings prepared by Links Architecture were subsequently sent to Ribble Ecology in January 2014. With reference to these drawings, the two stone-walled barns and the associated smaller buildings affected by the proposals are collectively termed 'the Site' or 'the Application Site' throughout the rest of this report.

C METHODOLOGIES, PLUS INFORMATION FROM EXISTING RECORDS

C.1 Objectives

In relation to bats, the objectives of the survey and assessment have been to:

a) Search internally and externally (by daylight) for any *evidence* of roosting bats.

b) Assess the *potential value* of features and qualify their likelihood of use (low / medium / high potential) by roosting and/or hibernating bats.

c) Conduct a dawn re-entry survey to identify *evidence* of roosting bats.

d) By means of nocturnal survey work, identify any bat interaction with the buildings, primarily any entrance into roosts but also foraging activity and possible flight corridors or access points that could be important to bats.

e) Where possible identify the species of bat(s) associated with any roost evidence and nocturnal activity.

In relation to Barn owl and breeding birds, the objectives have been to:

a) Undertake habitat appraisal in relation to Barn owl and other birds, identifying any nest habitat features and potential access points.

b) Determine the presence or absence of Barn owl, as indicated by field signs such as splashing and regurgitated pellets.

c) Identify any occurrences of current or old nests, along with the species of bird(s) that have created them.

Seasonal timing constraints were taken into consideration, as accounted for in sub-section C.5.

C.2 Pre-existing information on species at the survey site / in the locality

Desk study resources:

Prior to attending the Site, desk and internet based resources were used to obtain background information about known bat and bird occurrences in an approx. 10km surrounding radius.

Additionally, the desk study checked for any occurrences of statutory designated sites of ecological value (e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar wetlands or Site of Special Scientific Interest (SSSI)) and any local non-statutory designations (e.g. Biological Heritage Site (BHS), Wildlife Corridor, Green Infrastructure/Corridor/Space, Area of Outstanding Natural Beauty (AONB) etc.).

The resources used for the desk study were as follows:

- Bing Maps (www.bing.com/maps) and Google Earth 5 (http://earth.google.co.uk) for aerial photographs, plus Bing Maps (www.bing.com/maps) for a 1:25,000 Ordnance Survey map extract.
- Multi-Agency Geographic Information for the Countryside (MAGIC) collaborative database website (http://magic.defra.gov.uk/MagicMap.aspx), for information on statutory designations.
- National Biodiversity Network (NBN) Gateway (www.nbn.org.uk), for collated low-resolution records of protected and priority species occurrence.
- The Ribble Valley Council Districtwide Local Plan (approved 1998) Proposals Map North, for land designations (http://www.ribblevalley.gov.uk/site/scripts/documents_info.php?documentID=432).

Desk study results:

The Application Site is centred at grid reference **SD 47591 43545** and at this location there is no statutory national or international ecological land designation, nor is there any non-statutory Biological Heritage Site (BHS) designation.

Within the last 20 years there has been very limited documented evidence of bat species occurrences within a 5.0km range of this location. Notably, owing to this being a rural area the lack of records is very likely to reflect a lack of survey effort, rather than an absence of bat species. The results are as follows:

- Common pipistrelle*(Pipistrellus pipistrellus)*
- Daubenton's *(Myotis daubentonii)*

Ribble Ecology has not found any records of Brown long-eared bat (*Plecotus auritus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), Whiskered (*Myotis mystacinus*) or Brandt's (*Myotis brandtii*) but it is judged very likely that these species will also be present.

Barn owl (*Tyto alba*) is present throughout rural Lancashire, with records of occurrence within the 5.0km radius of the Site.

Additionally, it is taken into consideration that a range of birds will nest in association with buildings, including Swallow (*Hirundo rustica*), House Martin (*Delichon urbica*), Blackbird (*Turdus merula*), Wren (*Troglodytes troglodytes*), House Sparrow (*Passer domesticus*), Starling (*Sturnus vulgaris*) and several other garden passerine species.

C.3 Status of species, at local, county and regional levels

Common pipistrelle is likely to be the most frequently encountered and widespread species in the area. This is the most opportunistic of the UK bat species, utilizing both rural and urban settings and displaying a degree of tolerance to outdoor lighting and to vehicles and people.

C.4 Location of survey area

A 1:25,000 scale Ordnance Survey map and an aerial photograph (© Bing Maps) have been labelled to show the location of the Application Site, as presented on the following page.

Fig. C.4.1: Location of the Application Site on an Ordnance Survey Map

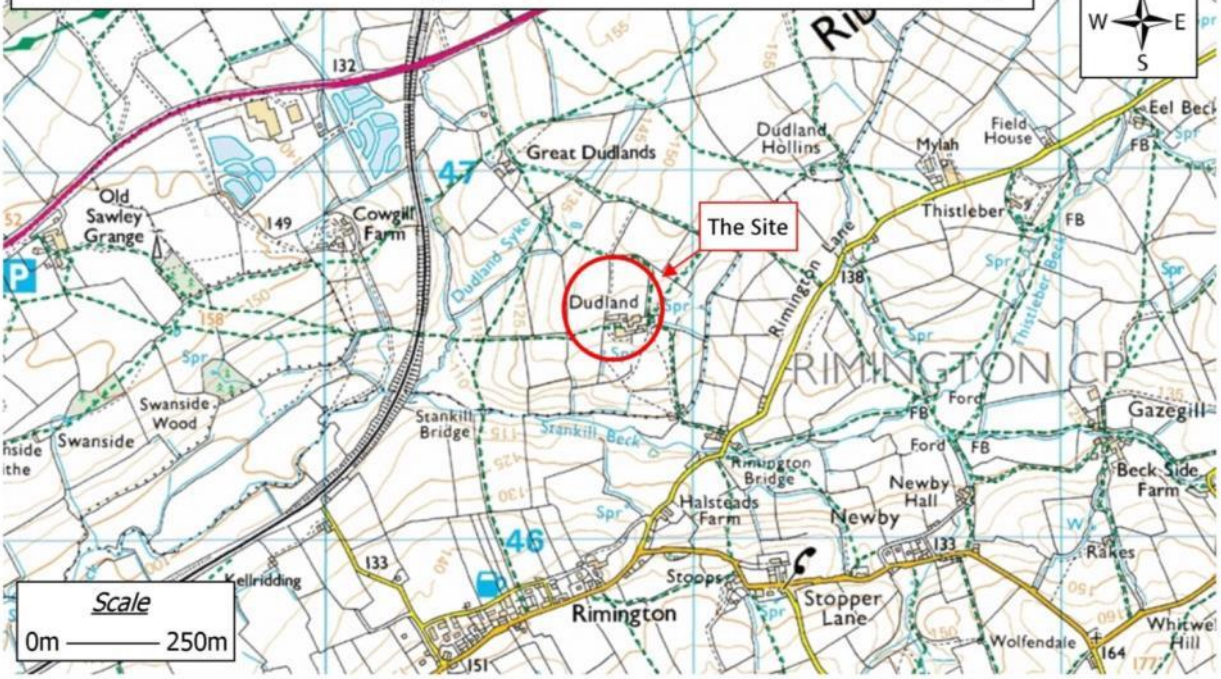


Fig. C.4.2: Location of the Application Site on an aerial photograph

As shown, Little Dudlands Farm is located outside the small village of Rimmington, in the rolling hills of the Ribble Valley Borough of Lancashire. It is surrounded by agricultural fields, along with a variety of mature trees and hedge lines, plus there is a tree-lined beck to the south of it (approx. 270m away at its closest) and there are other small water channels in the wider surrounding area.

C.5 Field survey(s)

C.5.1 Personnel:

The daylight survey work was undertaken by **Ms Lorna Bousfield BSc (Hons) MCIEEM**, with the assistance of Dr David Bennett. The nocturnal survey work was then undertaken by Ms Bousfield,

Dr Bennett, Ms Gemma Coar and Mr Richard Lowe.

Ms Bousfield is Principal Ecologist at Ribble Ecology and is an experienced bat worker and an active member of local bat groups. She holds class survey license **registration number CLS001700** and specifically class licence **WML CL18** (**Bat Survey - Level 2**) in respect of bats.

Dr Bennett is also an active member of North and South Lancashire bat groups and is experienced with undertaking dusk emergence, dawn re-entry and transect bat activity surveys in a range of habitats. He is actively training for his Natural England licence (Bat Survey – Level 2).

Ms Coar is an Assistant Ecologist at Ribble Ecology and Mr Lowe is a long-standing sub-contractor, both of which are suitably experienced in undertaking nocturnal surveys at a range of habitats.

C.5.2 Dates and weather conditions:

The work was undertaken as follows:

Date	Survey method applied	Weather conditions
22/09/13	Daylight survey, undertaken during the early afternoon.	16.0º Celsius, overcast but dry and with a gentle breeze (Beaufort 3).
23/09/13	Pre-dawn re-entry survey	11.5 – 11.1° Celsius, with calm conditions (Beaufort 1) being misty but dry throughout.

It was known that bat maternity roosts in northern England had mostly disbanded in August, thus the bat *activity survey* was checking for roost sites used in the *post-maternity* season. This made the daylight survey particularly important in determining the presence or absence of habitat potential for breeding bats and in checking for any field signs of the former presence of maternity roost sites (typically displaying abundant droppings and/or staining of features).

In recognition that the work was commissioned very late in the bat active season, it was judged that there was no merit to conducting a second nocturnal survey in 2013 because this would not provide any supplementary information about bat roost locations, species or numbers.

C.5.3 Methods:

Daylight survey and assessment:

In relation to bats an external inspection of the buildings was made, using binoculars, a set of ladders and a high-powered torch where appropriate. An internal search was made where safe and accessible. Roofs and walls were searched for features suitable for access and use.

The survey entailed searching for current and/or historic evidence of bat roost occupation including droppings, remains of invertebrate prey, grease marks from repeated contact or passage through narrow roost accesses, and/or bats themselves.

In respect of Barn owl the survey was to entail searching for suitable access points, and where access was available it would then entail searching for evidence of faecal splashing, old nest sites, regurgitated pellets, feathers and/or roosting Barn owls themselves.

In relation to breeding birds, habitat appraisal was applied in relation to access points and potential nest sites, and all evidence of active nests and/or old nests was to be noted.

Pre-dawn re-entry survey:

This commenced approximately 1.5hrs before sunrise and continued until official sunrise itself.

During this time, the surveyors monitored all elevations of the buildings, all using heterodyne on their bat detectors, coupled with attentive visual observation of the buildings and nearby air-space. Ms Bousfield and Dr Bennett were also using a real time expansion bat detectors in order to capture bat sonograms throughout the survey and two night-vision video-recorders, with banks of infra-red lights, frequency division bat detectors and recording devices (for the frequency division calls) were set up to capture all evidence of bat activity at two specific locations.

C.5.4 Equipment:

The following equipment was used:

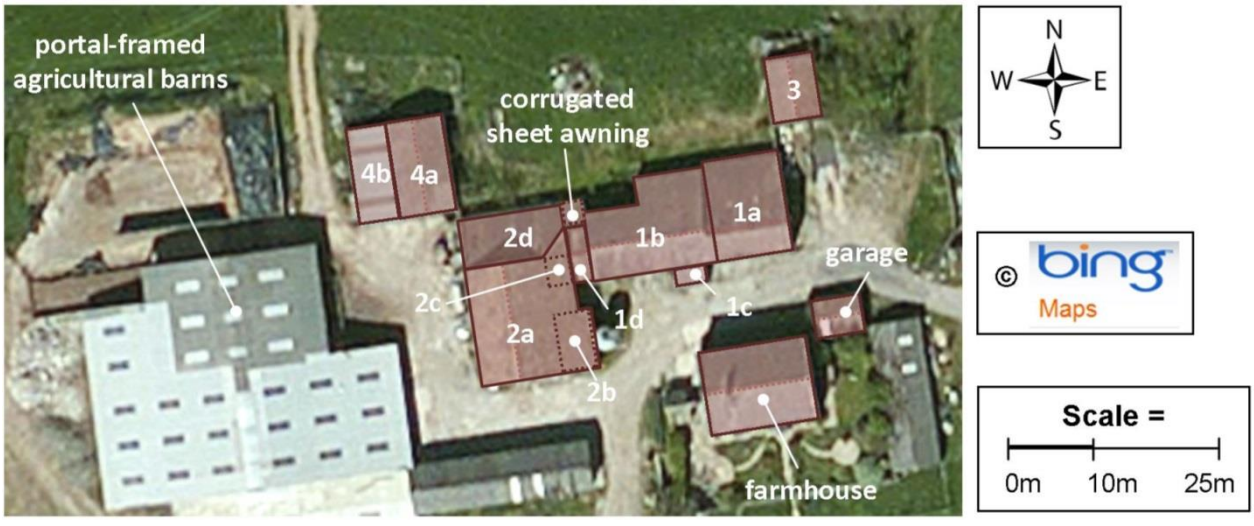
- Batbox Duet bat detectors x3
- Petterson D100 bat detector x 1
- Batbox III D bat detector x 1
- EM3 bat detectors x2
- 5m long, three-section extendable ladders
- Sony HDR SR10E HD Camcorders, with night-vision
- Banks of 4x 48-LED Infra-red Illuminator lamps x2
- LED Lenser P14 torches x3
- Head torches x 4
- Short-focus binoculars x 1
- Binatone two-way radios x 4
- Digital camera x 1
- Thermometer

D SURVEY RESULTS

D.1 Daylight survey

Fig. D.1 shows the orientation and size of the buildings at Little Dudlands Farm. As well as exemplifying those within the Site (labelled 1 – 4), it also shows the relative locations of others, including the farmhouse and portal-framed farm barns that are not included in the proposal.

Fig. D.1: Labelled layout of the buildings at Little Dudlands Farm



A full description of buildings to be affected by the proposed development is given within the following paragraphs.

Building 1: the eastern barn (sub-divided into parts 1a – 1d):

The northern elevation of this large stone-walled barn is shown in **Photo. 1** (next page), though additionally Parts 1c and 1d are small single-storey additions that are seen at the southern elevation, as labelled in **Photo's 2 and 3** (next page). All four parts are described in a little more detail in the following paragraphs.

Photo. 1

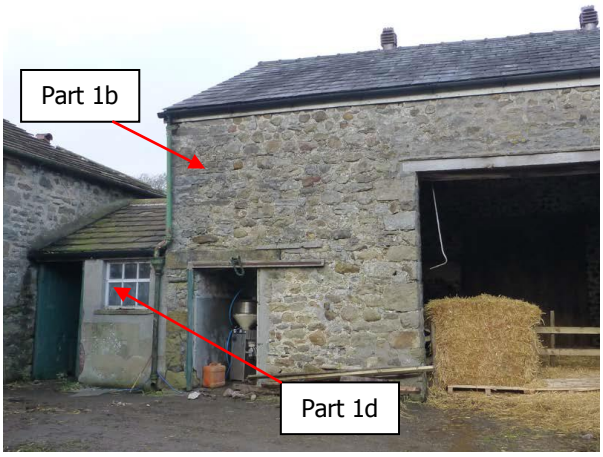


Photo. 2

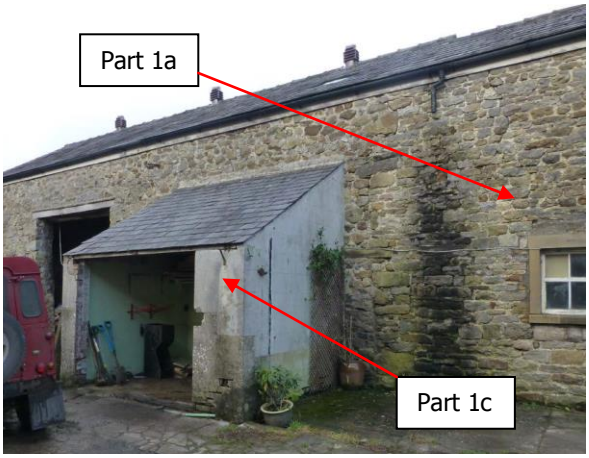


Photo. 3

Part 1a is the easternmost end of this large stone-walled barn, for which the eastern gable end is seen here in **Photo. 4**. As shown, it comprises a structure that is predominantly two-storey in height, but diminishes to single-storey at its rear (northern) elevation, as exemplified in **Photo. 1**.

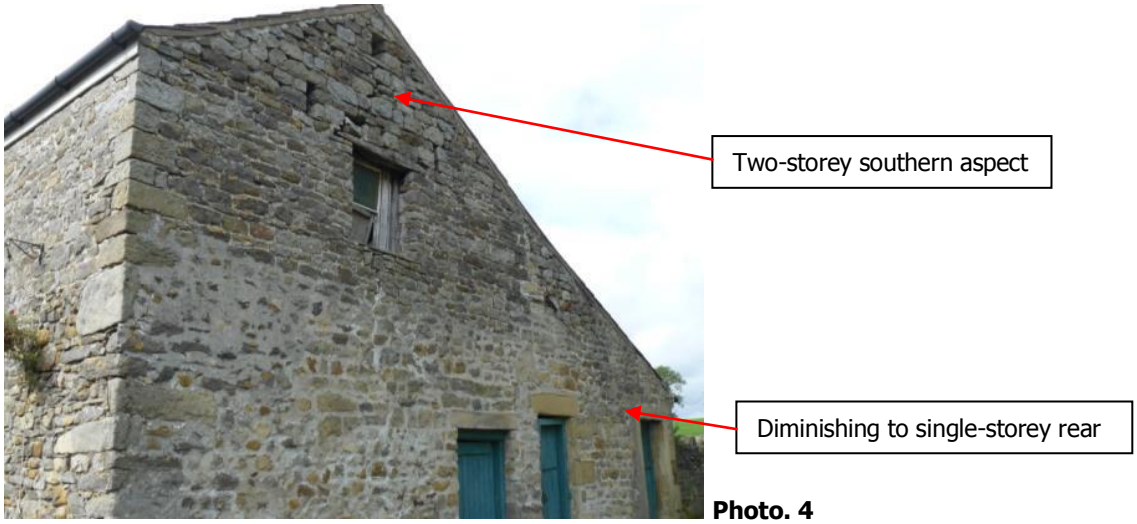


Photo. 4

Internally Part 1a is divided into many components, with livestock compartments to the ground floor and with substantial timber joists and planks forming the dividing floor. There is potential for bats and birds to gain access to the whole interior, as there are gaps around and through the old timber doors at the exterior and there are also occasional missing window panes. However, whilst the exterior eastern gable end displays an 'owl hole' and two ventilation slits, inspection of the interior shows these to be blocked up with stonework.

Both internally and externally there are examples where the stonework and mortar is quite well

sealed, but there is also extensive occurrence of deep mortar gaps between the stones. With the crevices appearing to lead deep into the walls they are judged to be of *moderate-high potential value for crevice-roosting bats*, including lone bats or groups of bats. Additionally they are of *low-moderate potential value for hibernating bats*.

Externally there is also the presence of a fascia board along the southern elevation of the barn and since this is lifted away from the wall there is a gap to its rear, affording *low-moderate potential value* for lone or low numbers of crevice-roosting bats. *Three bat droppings were detected on the wall beneath this board, of a size and structure indicative of pipistrelle*.

In relation to the roof, this comprises a traditional queen-post timber frame, externally finished with slates and underlined with bitumen felt. The roof is in good condition, as can be seen from **Photo. 1** (preceding page), yet there are still occasional gaps under slates and where the edge slates are bedded on mortar at the eastern end there are occasional gaps beneath them. Additionally, there are ceramic ridge tiles that are bedded on mortar, but again there are occasional gaps where mortar is missing. Many of the gaps are likely to be suitable for use by crevice-dwelling bats. It is judged that they will afford *low-moderate potential value for roosting*, though they will be of *no value to hibernating bats*.

In summary Part 1a displays the following:

- Features of *low-moderate and moderate-high potential value* for roosting and hibernating bats (plus *three bat droppings*, indicating the presence of either active or roosting bats at the southern exterior).
- Access and *moderate-high potential value* for nesting birds, including passerine species such as Wren or Blackbird, plus hirundines, i.e. Swallow (*one old Wren nest and two old Swallow nest noted at the time of survey*).
- Only *low potential value* for Barn owl, with restricted access and with *no evidence* of current or former use.

Part 1b is a slightly larger section of the stone-walled barn, both in footprint and in height, with the latter exemplified in **Photo. 1** (preceding page). Again, part of the northern elevation is only of single-storey height, serving as old-fashioned livestock housing, but this is separated from the main extent of the barn, which is predominantly two-storey in height, but open from floor to ceiling.

Again, both the internal and external walls display areas where they are tightly finished with mortar, plus the western exterior gable end is rendered. However, there are also very many gaps where missing mortar leaves crevices that enter deep into the stonework, including at the wall-tops, plus above both the large and small open doorways that are present at ground-floor. (see **Photo. 2**, preceding page). The gaps are judged to be of *moderate-high potential value for roosting bats* and *low-moderate potential value for hibernating bats*.

The open doorways also mean that there is potential for bats to utilise the barn for foraging or sheltering flight during periods of bad weather. Consistent with this, *one bat dropping was found just inside the large doorway and two bat droppings were present just outside the small door*.

As shown in, **Photo. 5** (next page) structurally there is a traditional king-post frame, over which there is an exterior finish of slates, mounted over bitumen felt underlining (there are also a small number of skylights). Comparable with Part 1a, the slates are neatly laid, but with occasional small gaps beneath them, including at the western gable end. The ceramic ridge tiles are affixed with mortar, but with a small number of gaps. Resultantly there is *low-moderate potential value* for crevice-roosting bats, though *no value for hibernating bats*.

Photo. 5

Where there is a section of the ground floor area partitioned off into separate livestock housing (as labelled on **Photo. 5**), this timberwork is judged to afford *no value for bats*, though aforementioned potential value associated with stonework still applies.

In summary Part 1b displays the following:

- Features of *low-moderate and moderate-high potential value* for roosting and hibernating bats (plus *three bat droppings at the doorways*, indicating the presence of either active or roosting bats at the southern exterior).
- Access and *moderate-high potential value* for nesting birds, including passerine species such as Wren or Blackbird, plus hirundines, i.e. Swallow (*one Swallow nest and two nests of a pigeon species recorded, plus one pair of ornamental doves present at time of survey*).
- *Moderate potential value* for roosting Barn owl, but negligible potential for nesting and *no evidence* of current or former use.

Part 1c is a single-storey attachment to the barn (see **Photo. 3**) and comprises brick walls, which are rendered. There is a single-pitch roof, externally finished with slates and internally finished with timber planking, as shown in **Photo. 6**. Local damage to this planking reveals there is no bitumen beneath the slates and that there is an approx. 8cm deep void or separation distance between the slates and the planks. Since there are occasional gaps beneath the slates, there is *low-moderate potential value for roosting bats*, though there is *negligible potential value for hibernating bats*.

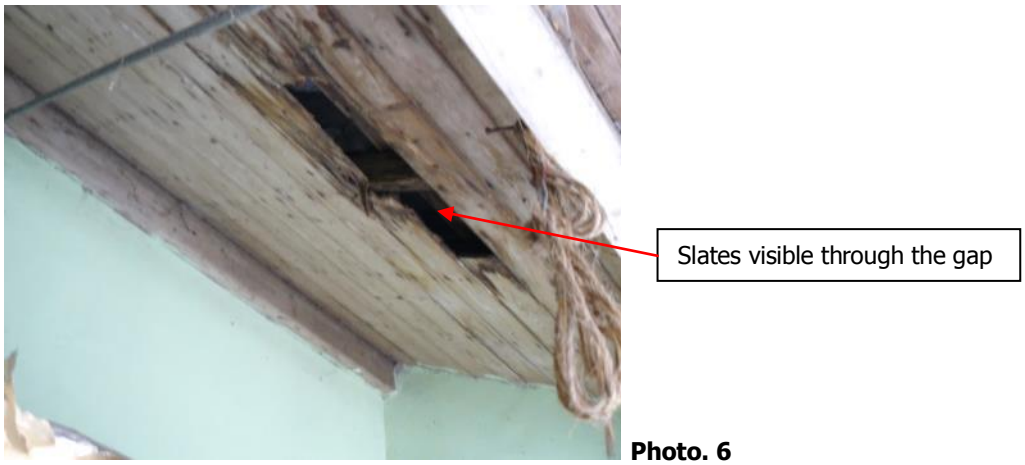


Photo. 6

Externally, Part 1c has no fascia or barge boards. The only potential value associated with the walls is where the slates sit atop them: here there are local mortar gaps and there is low-moderate potential value for crevice-roosting bats.

In summary Part 1c displays the following:

- Features of *low-moderate potential value* for roosting bats at the roof and wall-tops, though negligible value for hibernating bats and *no evidence* of bat droppings.
- Access, but only *low potential value* for nesting birds, with *no evidence* of nests at the time of survey.
- *No potential value* for roosting Barn owl and *no evidence* of current or former use.

Part 1d is a single-storey building that sits between barns 1 and 2, as shown in **Photo. 2**. It has a pitched roof that is externally finished with slates and it whilst its western and eastern walls comprise the stonework of the adjacent barns, its small southern and northern elevation walls are composed of brick, which has been rendered.

As shown in **Photo. 7**, the interior stone walls are skimmed with a thin layer of lime mortar parging, whilst the slates on the roof are also bedded on lime mortar. There is only *low potential value for crevice-roosting bats* in association with the roof, but the wall-tops are accessible to bats and thus afford *low-moderate potential value for roosting bats*.

Photo. 7

Further, although the window at the southern elevation is sealed, there is open access for birds or bats to use the interior, both via the doorway on the northern elevation and over the door itself on the southern elevation. An awning of corrugated sheet concrete-asbestos is additionally affixed to provide shelter at the northern side, as shown in **Photo. 8**. This is of *no value for roosting bats*.

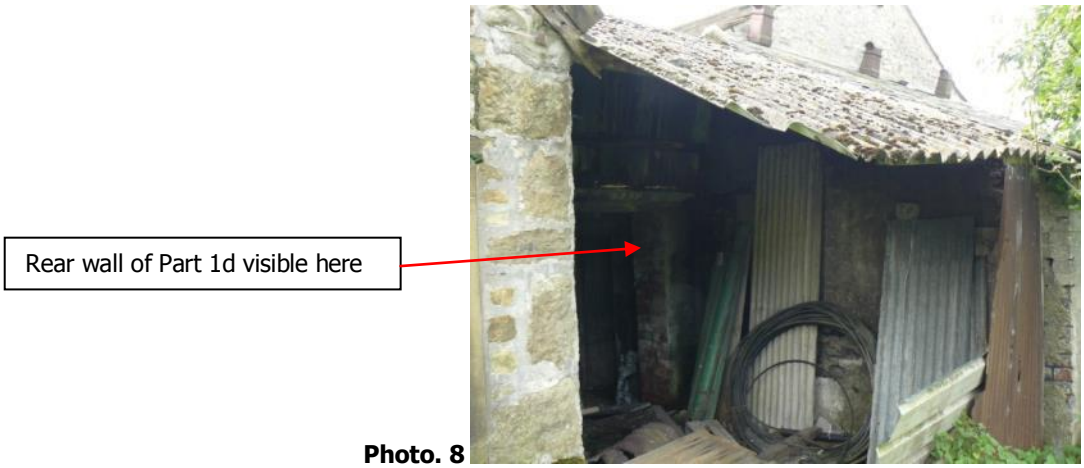


Photo. 8

In summary Part 1d displays the following:

- Features of *low and low-moderate potential value* for roosting bats at the roof and wall-tops,

though negligible value for hibernating bats and *no evidence* of bat droppings.

- Access and *moderate-high potential value* for nesting birds, particularly hirundines, with *three old Swallow* nests present inside.
- *No potential value* for roosting Barn owl and *no evidence* of current or former use.

Building 2: the western barn (sub-divided into parts 2a – 2d):

This is another substantially-sized barn, which is predominantly of stone-walled construction, though additionally with a brick-built component (Part 2d), as exemplified in **Photo. 9** and described in ensuing paragraphs; four structurally differing parts are described in more detail.

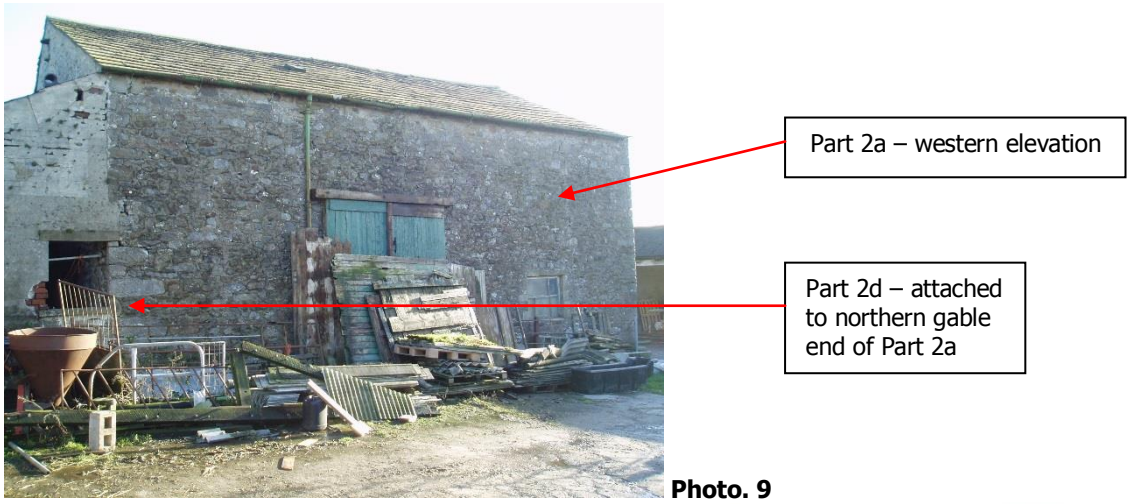


Photo. 9

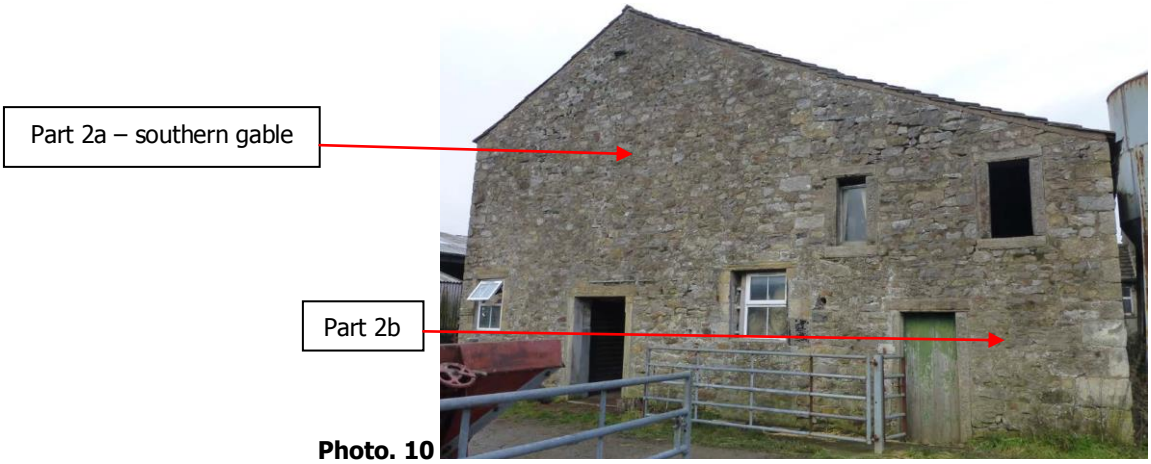


Photo. 10

Part 2a accounts for the main extent of barn, with its western and southern aspects shown in **Photo's 9 and 10**. Again, even though both the internal and external walls display areas where they are tightly finished with mortar, plus areas are finished with a thin skim of lime mortar parging to the interior, there are many gaps where missing mortar leaves crevices that enter deep into the stonework. Additionally there are gaps around the wall tops and there is judged to be *moderate-high potential value for roosting bats* and *low-moderate potential value for hibernating bats*.

The structure is entirely two-storey in height and is predominantly open from the floor to the underside of the roof, though its southern half is further partitioned down into livestock housing at ground floor level by a combination brick walls and timberwork (see **Photo 11**, next page). As shown, the space above the ground-floor compartments is open at its sides. The compartments themselves display *no value for bats*, though aforementioned potential value associated with stonework of the walls still applies.

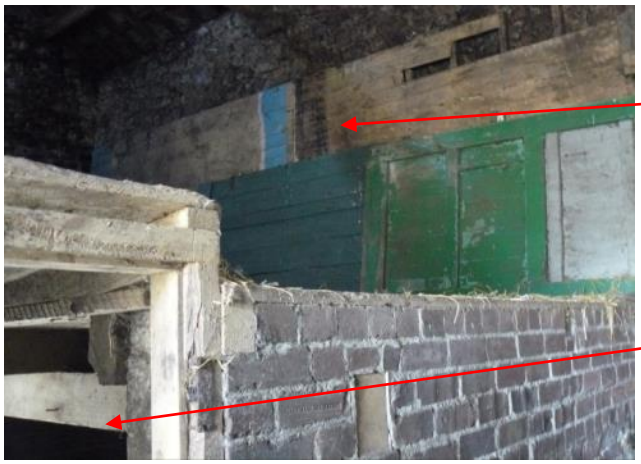


Photo. 11

The roof comprises a traditional timber frame, externally finished with slates and with no bitumen, so where gaps are present under the slates, these only afford *low potential value for lone crevice-roosting bats and no value for breeding or hibernating bats* as there is no sheltered space between outer and inner roofing layers. The ceramic ridge tiles have local gaps beneath them and will possibly offer a little more shelter, thus being of *low-moderate potential value* for roosting bats.

Externally there are no fascias or barge boards, whilst internally there is open access for bats or birds via the large doorways, the smaller door to the south and also an open 'owl hole' in the northern gable end, thus there is scope for bats to utilise the barn for foraging or sheltering flight during periods of bad weather.

In summary Part 2a displays the following:

- Features of *low-moderate and moderate-high potential value* for roosting and hibernating bats, but no evidence of field signs at the time of survey.
- Access and *moderate-high potential value* for nesting birds (*one Swallow nest and one Blackbird nest detected at time of survey*).
- *Moderate potential value* for roosting Barn owl, but negligible potential for nesting and *no evidence* of current or former use.

Part 2b is a subsidiary component within the outer framework of Part 2a, but is structurally separated by a long-standing inner stone, wall, thus is described separately. There is a ground-floor section that is dark and inaccessible to bats or birds, though can be accessed by people from doors at its northern and southern ends. Aside from aforementioned potential value associated with crevices in the stone walls, there is *no other potential value for bats*.

There is then additionally a hayloft / first-floor section, which is exemplified in **Photo. 12**.

Photo. 12

Again the roof slates are not lined in Part 2b, but there is local potential value for roosting bats atop the walls and in occasional mortar cracks into the stonework, plus additionally there is access for birds throughout because there are smashed-out windows on the western and southern aspects.

In summary Part 2b displays the following:

- Features of *low-moderate potential value* for roosting bats, but no evidence of field signs at the time of survey.
- Access and *moderate-high potential value* for nesting birds (*six Swallow nests counted in the hayloft section at time of survey*).
- *Moderate potential value* for roosting Barn owl, but negligible potential for nesting and *no evidence* of current or former use.

Part 2c is another subsidiary section within Part 2a, comprising a small room that is separated from the main barn by the presence of stone walls and that is accessed via the small door shown in **Photo. 13**. The roof and wall structure is the same as for the rest of the building and only affords low potential value for roosting bats.

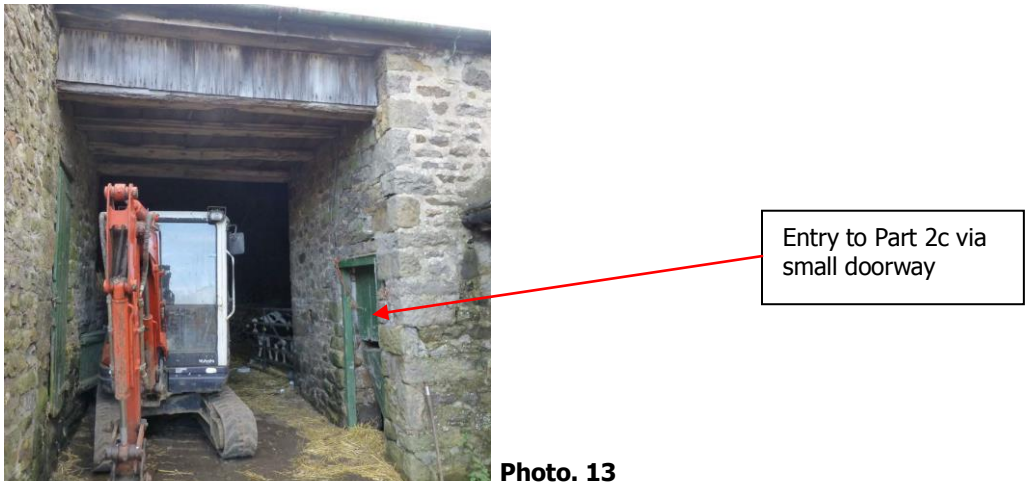


Photo. 13

In summary Part 2c displays the following:

- Only localised *low potential value* for roosting bats, with no evidence of field signs.
- *Very low potential* for use by nesting passerine birds such as Robin, with no evidence of use.
- *No value* for Barn owl.

Part 2d is the large single-storey extension that is attached to the northern gable of Part 2a. It has rendered brick walls, but as shown in **Photo. 14**, these are in disrepair.

Photo. 14

An array of crevices can be found in association with the damaged brickwork and render of Part 2d, many of which afford *moderate potential value for use by crevice-roosting bats* and *low potential value for use by hibernating bats*.

The roof of the structure is mostly of single-pitch, but also with a small hipped section at the north-eastern end. This is finished with slates, which are not underlined with bitumen. These only provide *low potential for use by lone crevice-roosting bats* and *no value for breeding or hibernating bats*.

In summary Part 2d displays the following:

- Wall crevices of *low-moderate potential value* for roosting or hibernating bats and roof features of only *low value for roosting bats*, with *no evidence* of field signs.
- *Low-moderate potential* for use by nesting passerine or hirundine birds, with open access to the interior, but with *no evidence* of use.
- *Low potential value* for roosting Barn owl, but no value for nesting and *no evidence* of use.

Building 3: a timber store

This structure comprises a sturdy timber frame, clad with predominantly corrugated metal sheets to its walls and corrugated concrete-asbestos to its roof, with a concrete-asbestos ridge finish and additionally with the western pitch displaying corrugated metal sheets underneath the corrugated asbestos, as can be discerned in **Photo's 15 and 16**.

Photo. 15

Photo. 16

At both gable ends there is a vertical timber planking finish, with gaps around the timbers and also with a large open window at the nothern gable and with gaps over ill-fitting doors.

Notwithstanding that there there is open access to the interior, there is *no potential value for roosting bats* inside or outside the building. The access does however present scope for bats to utilise the building for foraging or sheltering flight during periods of bad weather.

In summary Building 3 displays the following:

- *No value for roosting bats*, but with potential for use by active bats during bad weather.
- *Low-moderate potential* for use by nesting passerine or hirundine birds, with open access to the interior, but with *no evidence* of use.
- *Low potential value* for roosting Barn owl, but no value for nesting and *no evidence* of use.

Building 4: a modern agricultural building (sub-divided into Parts 4a and 4b)

Photo's 17 and 18 (next page) illustrate exterior and interior structural features associated with

this modern building, which comprises a portal-frame structure, structurally distinguishable as having two parts, as labelled and described below.

Photo. 17

Photo. 18

Part 4a has breeze-block walls along its elevations, but is predominantly open at its gable ends, with only the upper gables finished with corrugated metal sheets to prevent ingress of rain. Its pitched roof is finished with corrugated concrete-asbestos sheets, which are not lined on the interior. As shown in **Photo. 17**, it is used for storing straw bales.

In summary Part 4a displays the following:

- *No value for roosting bats*, but with potential for use by active bats during bad weather.
- *Low-moderate potential* for use by nesting passerine or hirundine birds (*one Swallow nest at time of survey*).
- *Moderate potential value* for roosting Barn owl whilst stocked with straw, but no value for nesting because of likely disturbance by farm use of the straw and *no evidence* of use.

Part 4b is attached to the western elevation of Part 4a and serves as an additional and more sheltered storage area. As shown, it has a single-pitch roof, which is finished with corrugated metal sheets that are not lined to the interior. Whilst it is open-sided at its southern gable end, it has breeze block walls to its western elevation and northern gable, the latter with a large open window, as shown in **Photo. 17**. The breeze blocks are hollow-core and there is access into the cores at the wall-tops. It is judged that only this feature affords low potential value for roosting bats.

In summary Part 4a displays the following:

- *Low value for roosting bats*, but also with potential for use by active bats during bad weather.
- *Low-moderate potential* for use by nesting passerine or hirundine birds, but with no evidence

at the time of survey.

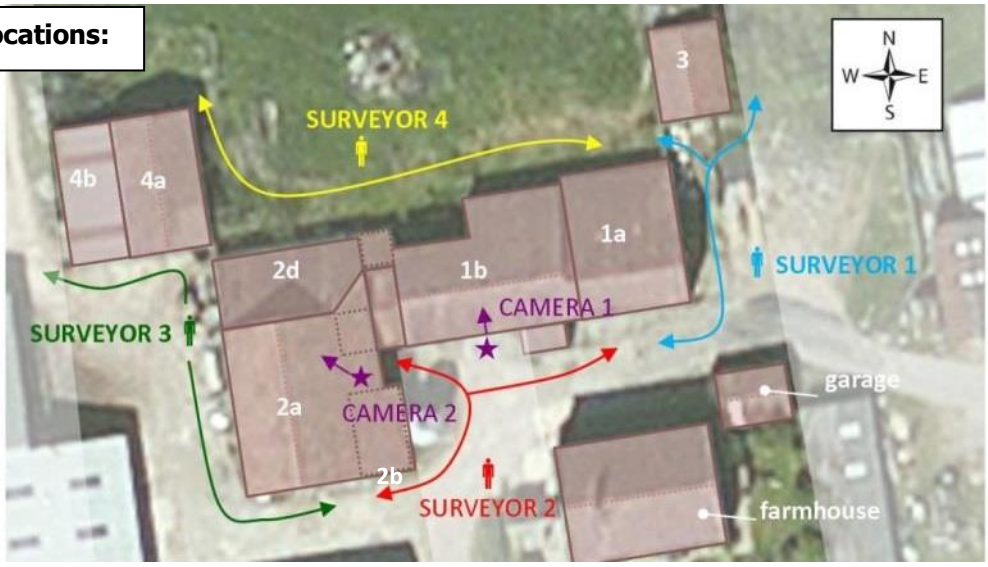
- *Negligible potential value* for roosting Barn owl and *no evidence* of use.

D.3 Pre-dawn re-entry survey

The weather conditions were good throughout the survey, plus they followed not long after one week of very windy and wet weather, thus there was strong likelihood of bat activity being at its highest for the time of year. There were no visibility limitations or other survey constraints. A summary of the results is presented as follows:-

Date: **23rd September 2013** Official sunrise time: **06:55hr** Survey start time: **05:16hr**
Survey end time: **06:55hr**, by which time it was fully light

Surveyor locations:



Surveyor 1	05:20 – 06:21hrs = A low level of Pipistrelle activity, mostly Common pipistrelle, but also 1x Soprano pipistrelle, with occasional feeding at trees near Building 3. 06:09hrs = **1x Common pipistrelle re-entered a roost** behind the fascia board on the southern elevation of Building 1a.
Surveyor 2	05:23hrs = Brief audio of 1x Common pipistrelle– the only detection of this species for the whole survey. 05:40 – 06:05hrs = 1x *Myotis* sp observed intermittently flying in and out of Building 2b through an open window on the southern gable end, often circling the external south-eastern corner of Building 2b. 06:05hrs = The 1x *Myotis* bat re-entered Building 2b and did not re-emerge, indicating a **probable *Myotis* sp. roost site in Building 2b**.
Surveyor 3	05:39 – 06:01hrs = audio of *Myotis* bat foraging within range of the surveyor. 05:44hrs – end = 3x brief audio detections of single Common pipistrelle passes. 06:12 & 06.13hrs = two brief visual detections of bats using air-space near the surveyor, but with no echolocation. Possible pipistrelle, as light levels high by this point in time. Both flew near the buildings, but then departed. No roost re-entry or interaction with the buildings.
Surveyor 4	05:36hrs – end = Only five audio detections of single Common pipistrelle bats. No roost re-entry or interaction with the buildings.

D.5 Summary of results

Bats:

By combination of the daylight and nocturnal survey work it has been possible to identify the following:

- **Building 1** has *one confirmed Common pipistrelle roost* associated with Part 1a, plus displays habitat features of substantive potential value for use by roosting and/or hibernating bats at other times of the year, as associated with holes leading into the stone walls, crevices between slates and bitumen felt and also the presence of a fascia board at the southern elevations. Such features range from having *low to moderate-high potential value for roosting bats*, plus *low-moderate potential value for hibernating bats*.
- **Building 2** has *one probable Myotis roost* associated with Part 2b and again it displays habitat features of substantive potential value for use by roosting and/or hibernating bats at other times of the year, largely comparable to those of Building 1. The value ranges from *low to moderate-high potential value for roosting bats*, plus *low-moderate potential value for hibernating bats*.
- **Building 3** displays negligible potential value for roosting or hibernating bats.
- **Building 4** displays negligible potential value for roosting or hibernating bats in Part 4a and only low potential value in the hollow-core wall tops of the breeze block walls in Part 4b.

In summary, mitigation and compensation measures for bats will be an essential requirement and will need to be incorporated from the outset, as explained in subsequent sections of this report.

Nesting birds:

The evidence and habitat value in relation to nesting birds can be summarised as follows:

- **Building 1** has *confirmed use by Swallow, Wren and an ornamental dove species*, plus displays habitat features of potential value for nesting birds, ranging *low to moderate-high potential value*.
- **Building 2** has *confirmed use by Swallow and Blackbird*, plus displays habitat features of potential value for nesting birds, again ranging *low to moderate-high potential value*.
- **Building 3** displays no evidence of nests, but moderate potential value for future uptake.
- **Building 4** has *confirmed use by Swallow*, plus displays habitat features of *low potential value* for future use.

This means that consideration of breeding birds will be necessary, both in relation to the timing of proposed work and also the provision of replacement habitat for Swallow.

Barn owl:

Whilst there is no evidence of Barn owl, there is moderate potential for future use of Buildings 1 and 2, plus low-moderate potential for use of Buildings 3 and 4 by roosting Barn owl. There is very low likelihood of nesting, but precautionary measures will nonethess still apply, in case of future colonisation.

E LEGISLATION & ASSESSMENT OF IMPACTS

E.1 Bats

All UK bat species are provided full legal protection under Schedule 5 (section 9) of the *Wildlife and Countryside Act 1981 (as amended)* and under *The Conservation of Habitats and Species Regulations 2010*, making them European Protected Species. In combination this legislation make it illegal to intentionally kill, injure, harm or disturb bats and illegal to damage, disturb or obstruct access to bat roosts.

The confirmed presence of roosts and additionally the identification of substantive potential habitat value for roosting and/or hibernating bats means that mitigation and compensation measures will form an essential part of the redevelopment proposal.

In order to determine the planning application the local planning authority must be confident that the proposed work will not detrimentally affect the population status of any protected species, including all UK bats.

The planning authority must be confident that mitigation and compensation measures are achievable and that 'the three tests' of the Habitats Directive can be met and that Natural England can grant a European Protected Species (EPS) Mitigation Licence.

At the time of writing, the two roosts recorded during the nocturnal survey can be classified in accord with Figure 4 (page 39) in the Bat Mitigation Guidelines (2004), as shown below:

- ***Roost site 1:*** This is the occurrence of a lone Common pipistrelle entering a gap to the rear of the fascia board on Building 1. The presence of a lone bat classes as a roost of **low conservation significance**. There is negligible likelihood of the roost status being higher at any other time of year, as there is no reasonable likelihood of hibernation or breeding use.
- ***Roost site 2:*** This is probable occurrence of roosting by a lone Myotis species of bat inside the hayloft section of Part 2b in Building 2. This is at a location that is unknown and it comprises a species that has not been conclusively identified. As it stands, the presence of a lone bat classes as a roost of low conservation significance, yet it is judged feasible that the roost status could be higher at another time of year, as the potential for hibernation or breeding use has not been discounted.

Under the planning proposal there will be significant invasive work and alteration to both Buildings 1 and 2. It is assessed that in the absence of any mitigation or compensation, the proposed work will have the impacts of:

A) Roost disturbance and possible roost loss for Roost site 1;

B) Complete loss of Roost site 2; and

C) Depending on the time of year and the methodology of the work, potential for killing and/or injury of bats at both aforementioned roost locations and also at the array of features displaying potential habitat value for bats elsewhere on the buildings.

Based on the survey results in this report, and with reference to Table 6.1 on page 37 of the Bat Mitigation Guidelines (2004), in the absence of appropriate mitigation and compensation, the proposed work would have a **'low' scale of impact** in relation to Roost site 1, but the scale of impact in relation to Roost site 2 cannot be accurately quantified.

It is clear that a **European Protected Species (EPS) Mitigation Licence will be required** and to acquire this licence there will need to be additional survey work to identify more detail about the roost usage at Building 2.

In relation to the planning proposal, it will be necessary to supply an Outline Mitigation Method

Statement to clearly identify what actions are going to be undertaken to achieve the redevelopment proposal, what the associated risks are in relation to bats and what the associated mitigation and compensation measures shall comprise. See **Section F.1** of this report for details.

E.2 Nesting birds

Wild birds, their nests and their eggs are protected under Part 1 of the *Wildlife and Countryside Act 1981*, which makes it illegal to kill or injure a bird and to destroy its eggs or its nest whilst it is in use or being built. Game birds are an exception and are protected under the separate Game Acts, which fully protect them during the close season.

With evidence of nesting birds having been detected, there is a risk that the proposed work could have a negative impact on breeding birds. To ensure that this risk is eliminated, it is necessary to apply the recommendations presented in **Section F.2** of this report.

E.3 Barn owl

The Barn owl is not only protected under Part 1 of the *Wildlife and Countryside Act 1981*, as are all breeding wild birds in the UK, but it is also listed in Schedule 1 of the *Act 1981 (as amended)* and this afforded it special protection that makes it illegal to *disturb* the species whilst at the nest.

Although there is currently no evidence of Barn owl, there is habitat suitability for the species and there is a risk that there will be future colonisation. To that end, on a precautionary basis it is necessary to apply the recommendations presented in **Section F.3** of this report.

F RECOMMENDATIONS

F.1 Protection of bats

An EPS Mitigation licence will be required in order to successfully implement the proposed work in compliance with wildlife legislation.

The Method Statement that is compiled as part of the licence application must clearly demonstrate that the favourable conservation status of the local populations of Common pipistrelle and the Myotis species shall be maintained. The Method Statement must prescribe exactly what timing restrictions and other actions will be applied in order to protect bats and exactly how roost habitat of equivalent or greater value can be included in the scheme.

The EPS licence can only be applied for once planning permission has been granted, but it is essential that the Planning Authority is assured that the proposed mitigation and compensation is achievable. To demonstrate this, an Outline Mitigation Method Statement will be needed, the basis of which will be used for the EPS Mitigation Licence's Method Statement once permission for the work has been granted.

As an indication, but not an all-encompassing mitigation scheme, the actions presented in the Outline Mitigation Method Statement are likely to include the following:

- Supplementary nocturnal survey work to ensure that there is a robust understanding as to the roost status for all the buildings. Owing to the time of year at which the work was undertaken, there was no validity to conducting a supplementary survey in 2013, but reference to the national Guidelines[1] confirms that implementation of two to three nocturnal surveys would be appropriate, due to the substantive potential value that has been identified, coupled with the confirmed presence of one roost site and probable presence of another roost site.

[1] Parsons, K. et al. Bat Surveys. Good Practice Guidelines – 2nd Edition. Bat Conservation Trust. 2012.

- Results from nocturnal survey work will establish precisely what species-specific and roost-specific mitigation and compensation is required, facilitating the preparation of a detailed Outline Mitigation Method Statement, which will then ultimately contribute towards an EPS Mitigation Licence.

- Even if the nocturnal survey work presents no further evidence of roosts at the time of survey, EPS licencing will still apply on the basis of the results that have been obtained to date: a roost site retains the status of a 'confirmed roost' even when it is not being occupied, because bats routinely move between different roost sites, thus are not always in occupation at the time of survey.

- Additionally, precautionary measures will apply when undertaking invasive work on all features with potential habitat value for bats (as itemised in this report). Details of the proposed implementation work must be discussed between demolition or renovation workers and an ecologist and precautionary actions to check for bats must be agreed upon and compiled in writing, both for submission to the local planning authority and for use as a working method statement whilst on site. For example though, the features may need to be made the subject of an additional pre-commencement nocturnal survey and they will certainly need to be dismantled by hand and with care, possibly in the presence of a licenced bat worker, depending on the level of risk.

- All workers will have to be made aware of the potential for occurrence of bats and will have to be alert for the presence of bats, and/or any accumulations of bat droppings at all times when stripping features of potential value. For guidance, the photographs on the following page show a Common pipistrelle bat and an accumulation of bat droppings.

Fully grown Common pipistrelle bat

Pipistrelle bat droppings, which look like mouse droppings, but crumble to dust when squashed between the fingers (comprising tiny, glistening bits of insect wings etc.)

- If a bat (or an accumulation of bat droppings) is discovered at any time during the work, is an experienced bat ecologist is contacted for guidance and assistance. This can be the consultant who undertook the initial survey (Ribble Ecology: 01772 879545), any other licensed bat worker, or the Bat Conservation Trust (BCT) helpline (0845 1300 228).

- If it is necessary to capture a bat to remove it to safety, this should be undertaken with gloves or a light cloth, capturing the bat and containing it whilst the advice of the bat worker is sought. Thereafter, following the on-site advice of the bat worker will ensure there is no breach of the legislative protection afforded to roosting bats.

Inclusion of alternative roosting provisions will be essential as compensation for the loss of any confirmed roost sites, as will be covered in both the Outline Mitigation Method Statement and the EPS Mitigation Method Statement. **Appendix 1** of this report presents some examples of bat roost features that can be incorporated into new-build and conversion works.

Implementation of a successful mitigation and compensation scheme is judge to be feasible and achievable, but will require a good working relationship between a consultant ecologist and the applicant, the scheme's architects and the on-site demolition and construction workers. With good communication between all parties, a well-designed, practical and achievable proposal will be given.

F.2 Protection of breeding birds / Barn owl

The bird breeding season typically extends from the beginning of March to the end of August inclusive, though Swallows are migratory and tend to only return to England in early April, rather than March.

Since Swallows are very faithful to their nest sites it is essential that invasive work takes place *outside* their nesting period because there is a high likelihood of annual return to the same nest site.

Additionally, precautions will also apply in relation to other birds, thus where possible the work is to commence outside the breeding season and where other constraints dictate that commencement will have to locally take place *during* the bird breeding season then the following precautions must be applied beforehand:

- In the days immediately prior to commencing work, a thorough inspection is to be made within and around the building to check for opportunistic colonisation by breeding birds.
- If any occurrences of breeding birds are detected, the nest must be left undisturbed until the chicks have fledged, at which point the work can take place.

Further, for the number of Swallow nest sites that are destroyed as part of the proposal, it will be necessary to install an equivalent or greater number of replacement nesting habitat features as part of the re-development scheme. **Appendix 2** of this report presents some guidance on incorporating nesting opportunities for Swallows into new-build or conversion works.

F.3 Protection of Barn owl

Even though the buildings do not support nesting Barn owls, if there is any use by roosting Barn owl in the future then this will be noteworthy and it will prompt a requirement to ensure there are replacement roost features elsewhere at Little Dudlands Farm. Appropriate measures to apply as part of the work are as follows:

- No building and construction work shall be commenced unless evidence has been provided to the Local Planning Authority that no Barn owls are nesting (at the development site to which this consent applies) immediately prior to work commencing.
- If any evidence of roosting Barn owl is detected, provisions for replacement perching and roosting owls will be presented on paper, approved by the planning authority and then implemented in full.

G ADDITIONAL CONSIDERATIONS: BIODIVERSITY RETENTION & ENHANCEMENT

Best practice use of outdoor lighting:

Outdoor lighting is typically a deterrent to wildlife so any future installation of outdoor lighting in should be screened, hooded or positioned low at bollard level so that it does not illuminate the roofs or eaves, or nearby trees and shrubs.

Best practice approach to planting:

Where possible, it is recommended that new planting favours a mixture of trees, shrubs and herbs that produce flowers and berries or fruits, plus night-scented plants. These can provide shelter and food for a wide array of wildlife, including insects, birds and bats. An array of suitable trees, shrubs and plants is available, but some suggestions are listed below:

Trees: Rowan *(Sorbusa cuparia)*, Apple *(Malus sp.)*, Plum *(Prunus sp.)*, Field maple *(Acer campestre)*, Common whitebeam*(Sorbus aria)*.

Shrubs: Holly *(Ilex aquifolium)*, Hazel *(Corylus avellana)*, Forcythia sp., Lilac *(Syringa vulgaris)*, Butterfly bush *(Buddleja davidii)*.

Climbers: Honeysuckle *(Lonicera periclymenum)*, Clematis sp., Climbing roses *(Rosa sp.)*, Wisteria floribunda.

Night-scented: White jasmine *(Jasminum officinale)*, Tobacco plant (*Nicotiana sylvestris / alata)*, Night-scented stock *(Matthiol abicornis / oxyceras)*.

Herbs: Lavender *(Lavendula angustifolia)*, Sage *(Salvia officinalis)*, Rosemary *(Rosmarinus officinalis)*, Mint *(Mentha sp.)*, Oregano *(Origanum vulgare)*, Chives *(Allium schoenoprasum)*.

Boundary fences permeable to wildlife:

Close boarded fences with concrete bases are barriers to animal movement. It is recommended that any new perimeter fences along the boundaries of new residential gardens are *not* to be close-boarded and are *not* to be sealed at their bases.

H REFERENCES

Google Earth 6.1.http://earth.google.co.uk

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

Mitchell-Jones, A. J. & McLeish, A. P. The Bat Workers' Manual. 3rd ed. 2004.JNCC.

National Planning Policy Framework (2012)

Office of the Deputy Prime Minster (August 2005) Government Circular: Biodiversity and Geological Conservation, Statutory Obligations and their Impact within the Planning System. H.M.S.O., London.

Parsons, K. et al. Bat Surveys. Good Practice Guidelines – 2nd Edition. Bat Conservation Trust. 2012.

The Conservation of Habitats and Species Regulations (2010)

Wildlife and Countryside Act (1981). H.M.S.O., London.

APPENDIX 1 – bat roost opportunities

Bat roost boxes or access bricks can be built into upper walls at gable ends. This is subtle but provides high quality roost habitat.

Position them to avoid locations above windows or doors.

There are a range of designs & suppliers, including these examples:

http://www.ibstock.com/sustainability-ecozone.asp
http://www.forticrete.co.uk/products/184/bat-boxes.html

Ibstock
Height=265mm Width=180mm
Depth= 240mm

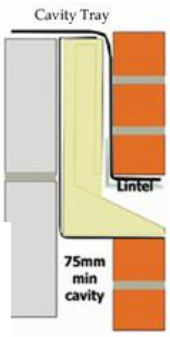
Ibstock
Height=265mm
Width=180mm
Depth= 240mm

Ibstock
Height=265mm
Width=180mm
Depth= 240mm

Schwegler N27
Height=265mm
Width=180mm
Depth= 240mm

Schwegler 1FR
Height=475mm
Width=200mm
Depth= 125mm

Wild-X Cavity Bat Roost
Height=440mm
Width=420mm
Depth (at base)= 170mm



Small Cavity Bat Roost
Height=440mm
Width=210mm
Depth (at base)= 170mm

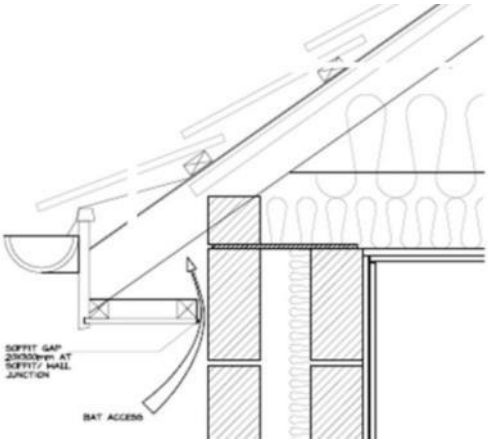
Fascia boards and barge boards provide valuable bat habitat, provided they are offset from the stone wall by about 20mm (3/4 of an inch)

This should allow the bats two options:

a) Roosting directly between the wall and the fascia board

b) Access to the tops of the walls (see separate recommendation).

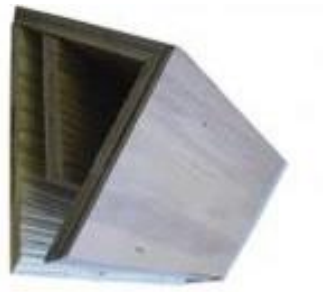
Soffit boxes can be fitted/adjusted so that there is a gap at the back, near the wall, to allow bats to crawl up into them to roost, as shown



Depending on the design of the building, access provisions for the bats can then either allow:

a) Access to roost on the tops of the walls (see separate recommendation).

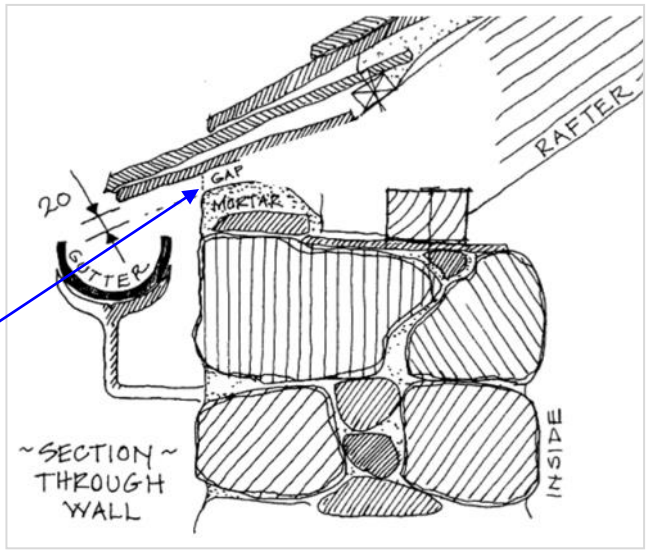
b) Roost provisions in the soffit box, sometimes using pre-made soffit roost features such as the one shown to the right http://www.wildcareshop.com/Products_Results.php?pageNum_WADAProducts=1&totalRows_WADAProducts=25&Search=1&ProductCategoryID%5B%5D=5



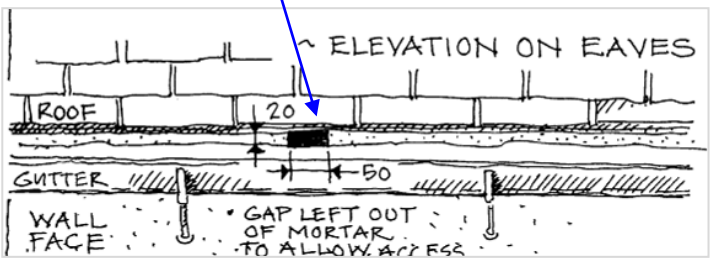
Bat access onto wall-tops can be achieved for stone-built and brick-built walls.

When work is undertaken on a roof, there is an opportunity to leave localised gaps that create wall-top roost sites, as shown in these diagrams.

It is also possible to leave an unfilled cavity in the uppermost 10cm of the wall, so there is a hollow in which bats can roost

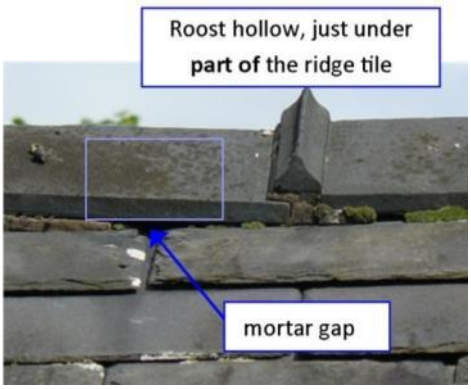


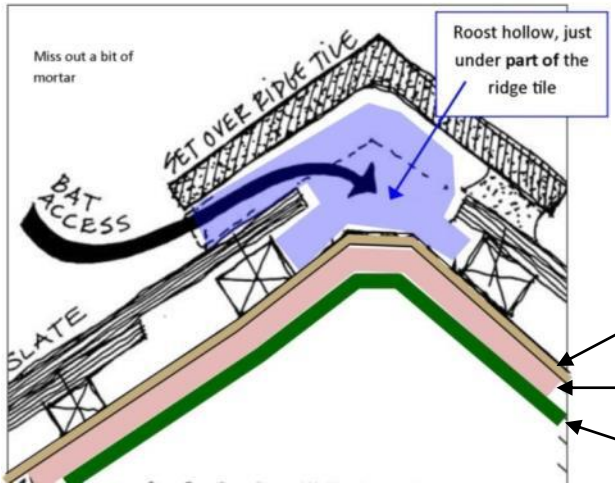
Entrance hole size = approx. 20mm x 50mm, and must lead to a gap on the wall top



Access **under ridge tiles** can be achieved with no loss of water-tightness.

Small gaps are left out of the mortar of certain ridge tiles and the hollow under the ridge tile is not filled with mortar at these locations, so there is a roost hollow, as shown in the photo & diagram.





NOTE: There is no means of the bats getting into the roof void, or of them making noise that can be heard in the room below because:

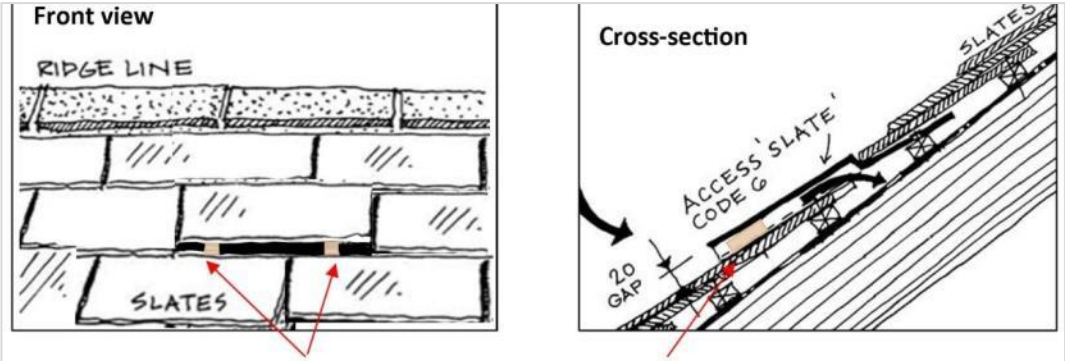
Initially there is the continuous breathable membrane below the battens

Then there is the insulation between the rafters.

Then there is the plasterboard (or similar) to create the ceiling for the room below.

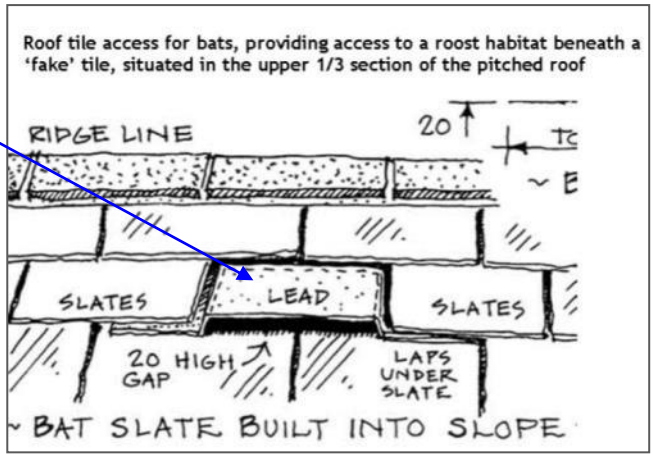
Access under slates enables bats to roost between slates and the roof membrane, with no detriment to water-tightness (*high-quality membrane is essential*). Access can be created in 2 ways:

1) Insert small chocks of wood under specific slates that are one or two rows down from the ridge



Small chocks of wood to raise the slate a little (i.e. by 15 – 20mm)

2) Create 'lead saddles' (i.e. mould pieces of lead, like shown below).



APPENDIX 2 – Swallow nest notes

Swallows nest **inside** buildings or under substantial roof overhangs, using ledges or nooks at the wall-tops and adjoining the rafters, where they need to get a fixing to attach their mud-constructed nests to. They favour relatively dark locations for their nests, and seek fairly stable temperatures.

Roof overhangs can also be used, with the main habitat creation specifications being as follows:

- Either utilise the underside of large roof overhangs, *or* provide access to the interior of a building, with an open flight-line.
- Fix nest platforms and cups high on the walls, at the junction between walls and roof, or on purlins or joists, being selective about where you would like the Swallows to nest and also where is safe, accessible and suitable for the Swallows to nest.
- Affix a timber board and a plastic sheet below any nest that risks being at conflict with people or items below it, to catch droppings. The plastic can then be detached and replaced or washed each year.
- It is appropriate to block off any parts of the building where you *don't* want the birds to nest, for example by attaching polythene to a beam, then to the roof and back to the beam again

Ready-made nest cups can be purchased as shown here:

Schwegler Swallow Nest No. 10 http://www.nhbs.com/schwegler_swallow_nest_no_10_tefno_158625.html	
Ceramic Swallow Bowl http://www.nhbs.com/ceramic_swallow_bowl_tefno_173581.html