

**CARRAWBROUGH FARM, NEAR WALWICK– PROPOSED RENOVATION
BAT AND BIRD REPORT – SEPTEMBER 2018**

SECTION 1 BACKGROUND AND SUPPORTING INFORMATION

A. Executive Summary

- Carrawbrough Farm is situated 3.8km northwest of Walwick in Northumberland, just south of the Military Road. The byre surveyed is constructed from stone with a corrugated asbestos roof.
- The immediate area has restricted potential for feeding bats, with small plantations immediately west of the site. Further isolated coniferous plantations are present within 300m to the southeast however surrounding farmland is exposed and lacks hedgerows or other features that would form feeding corridors for bats.
- Inspection results revealed crevices, some large within the masonry with the walls open topped reducing bat potential. No traces of bats were located within the buildings although traces of barn owl were present. There is low risk that a bat roost is present in this building and two emergence surveys were carried out in September due to late commissioning.
- The emergence survey did not identify any emergence from the barn, though Pipistrelle 45kHz, Pipistrelle 55kHz and Noctule bats were identified foraging or commuting near the site. The first survey identified a barn owl emerging from within the barn from the east gable, flying to the south.
- Timing of the works to avoid the hibernation period will ensure that the development has as little negative affect on bat conservation status as possible.
- Cautionary mitigation will be put in place, as bats may be present at any time of the year in small numbers. Provision for bats will be made.
- Provision for Barn Owls will be made. Any nesting birds will be allowed access to the nest until the birds have fledged.

B. Introduction.

B1 Background.

Carrawbrough Farm is situated 3.8km northwest of Walwick in Northumberland. The barn surveyed is constructed from stone with a corrugated asbestos roof.

B2 Proposed Works.

Restoration is proposed with the stonework repaired and replaced where necessary:-

- The asbestos sheet roof will be removed and replaced with slate.
- The eastern gable wall will be repointed and the wall heads along with some poor areas of masonry will be rebuilt. The north wall will be repointed. The south wall will be repointed, and the eastern end of the wall will be rebuilt.
- The windows and doors will be renewed. The opening at high level in the east gable wall will be boarded up, *leaving access for the Barn Owls.*

C Survey and site assessment

C1 Pre-existing information on the species at the site.

No pre-existing records are known. The tenants reported that the farmhouse was renovated c. 7 years ago and that they have bats in the farmhouse (as well as a barn owl in the barn).

Status of species in the local/regional area.

Known bat activity in the area within 2km of the site consists only of foraging bats of Pipistrelle 45kHz bats, Pipistrelle 55kHz, Whiskered/Brandt's, Noctule and Leisler's Bat (all 2014-2017). Maternity roosts of Brown long-eared (1992) and Pipistrelle sp. (1985) plus small roosts of Pipistrelle 45kHz and Brown long-eared are known 3-3.5km to the northeast (2015). (ERIC North East - A full data set is available upon request).

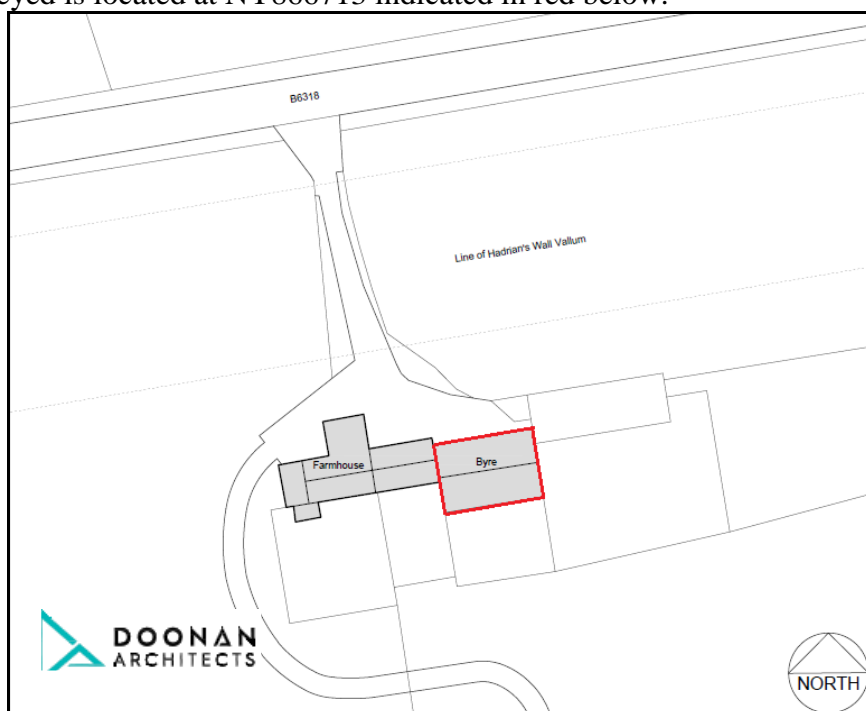
Locally and regionally, the Common Pipistrelle is the most common bat. Both Pipistrelle 45kHz and 55kHz bats are frequent in northern England, although Pipistrelle bats are the most abundant species they are thought to have declined by 70% between 1978 and 1993 (National Bat Colony Survey). Since 1997 monitoring by the National Bat Monitoring Programme (NBMP) has shown that bat numbers seem to be steady with small fluctuations up or down depending on the species and survey type carried out. The Brown long-eared bat is occasional with colonies much smaller in numbers than the Pipistrelle. Daubenton's, Natterer's and Whiskered/Brandt's bats are also occasional but widespread in Northumberland with an average colony size being about 35 adult bats.

C3 Objectives of survey

The survey was to determine as far as possible, the presence of bats and birds and their roost sites in the building affected at Carrawbrough Farm. The aim is to prevent any animal being physically harmed, to protect all roost sites where possible and to provide mitigation for the proposed development to maintain conservation status.

C4 Survey area

The barn surveyed is located at NY866713 indicated in red below.



C5 Habitat description

Carrawbrough Farm Barn lies to the east of the farmhouse surrounded to the west by small coniferous plantations set in an area of improved grassland/rushy grassland (permanent pasture), which has little sheltered foraging nearby. Small and isolated plantations are present 300m to the southeast and 500m to the southwest with more extensive plantations located 600m to the southwest (These latter plantations are due to be felled shortly). There is a lack of suitable bat feeding corridors between these locations as the surrounding farmland is exposed. The permanent pasture can provide suitable hunting areas for Barn Owls.

The site and area has limited potential for feeding bats, due to the lack of feeding corridor for bats to further afield and is unlikely to support a large number of bats. Bat roost potential will be restricted to the scattered dwellings in the area and any suitable tree.

Photographs of site



The barn viewed from the north.



The barn viewed from the southeast.



The west gable of the barn.



C6 Field Survey

C6.1 Methods

A close inspection of the building was made in good light, using a torch where required. The interior and exterior of the building were examined as far as was feasible for signs of bats:

droppings, urine streaks, clean cobweb-free areas on the ridge boards or crevices and potential roost exit holes. All external crevices were checked using a torch, where accessible. Possible roosting sites were noted.

C6.2 Emergence Survey

As dusk fell 2 surveyors, each using visual observations and bat detectors (Echo Meter EM3's / Touch and Elekon Bat Scanner) and two-way radios, carried out the evening emergence surveys, covering all aspects of the buildings. Bat detectors convert bat echo-location signals into audible sounds, enabling the identification of some species, and aid the monitoring of the number of bats present. Two way radios help to determine the emergence and flight paths of a bat seen by surveyors around the site and allow the bat activity of the whole site to be understood, whilst at the site.

Surveyors are on site for at least quarter of an hour before sunset and up to 1½ hours after sunset or until darkness falls as reduced visibility does not allow bats to be seen emerging from the building being surveyed. After this time any bats picked up by detector, cannot be guaranteed to have emerged from the building in question, but confirms if additional species are present in the area or not. If bats or a maternity colony is present the bats are counted until no bats have left the roost for 10 minutes for as long as it takes.

C6.3 Timing and Weather Conditions

Survey	Date	Timings	Weather
Inspection	2 September 2018 & 30 September 2018	Externally and internally (30 min)	Fine and dry
Emergence	2 September 2018	7.45pm -9.10pm (sunset 7.58pm)	Fine, light cloud and still. 19 - 17°C
Emergence	30 September 2018	6.30pm -8.05pm (sunset 6.47pm)	Fine, light cloud and breezy. 8 - 7°C

C6.4 Personnel

Ruth Hadden - Bat Consultant since 1996, Class Survey Licence CL20 2015-13665-CLS-CLS (Bat Survey Level 4). Licensed to handle bats and enter known roosts since 1986. Class Survey Licence CL15 2015-10388-CLS-CLS, (Volunteer Bat Roost Visitor Level 1).

Qualifications BSc Joint Honours Zoology & Plant Biology, Newcastle upon Tyne. MCIEEM Lesly Rymer.

C7 Results

The byre is single storey, stone built with a pitched corrugated asbestos roof that has roof lights and vents. The stonework has large crevices on the east gable and south wall with open access through the doors and windows. The walls are whitewashed and the walltops are open and the west gable adjoins the farmhouse. A central wall c.3m high divides the middle of the barn beneath the ridge. No traces of bats were identified inside the building.

Possible hibernation sites include any deep cavities, where present, in the walls of the building.

Traces of barn owls were found within the building, pellets and bird lime with a number of feathers located throughout. A bird was seen in the early September survey, emerging from the east gable of the barn and flying south. The bird was observed during one of the inspections for bats flying from the west end of the building along the length of the building and out of the window in the east gable.

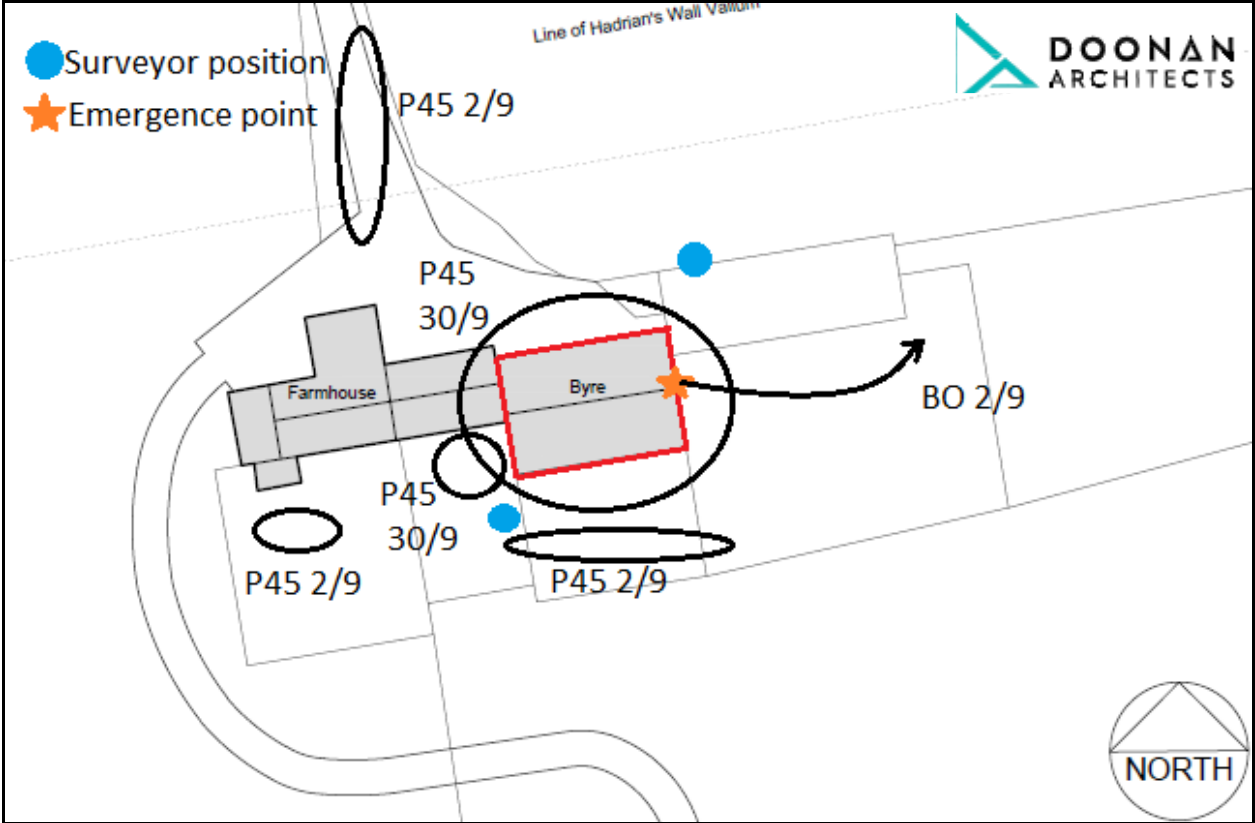
The west gable is stepped or ragged and it is considered that a cavity may be present where it adjoins the farmhouse where a suitable nesting place may be present for the Barn Owl. Jackdaw nesting material was also present in this location.

The emergence survey did not identify any bat emergence from the barn, though Pipistrelle 45kHz, Pipistrelle 55kHz and Noctule bats were identified foraging or commuting near the site.

Table 1 Emergence survey results.

Date	Bat Activity
2 September 2018 7.58pm 8.30pm 8.32pm 8.34 – 8.42pm 8.43-8.48pm 8.52pm 8.54- 9.15pm 8.55pm 9.10pm	Sunset. Pipistrelle 45kHz bat foraging south of the farmhouse, social calling. Noctule bat heard but not seen to the north of the site. Barn owl emerged from the east gable window. Pipistrelle 45kHz bat foraging to the north along the drive. Pipistrelle 45kHz bat foraging south of the site, social calling. Pipistrelle 55kHz bat heard but not seen, south of the barn. Pipistrelle 45kHz bat foraging south of the site, social calling. Pipistrelle 55kHz bat heard but not seen north and south of the barn. Survey concluded, very very dark.
30 September 2018 6.47pm 7.30-7.35pm 7.32-7.35pm 8.05pm	Sunset. Pipistrelle 45kHz bat foraging to the north of the barn. Pipistrelle 45kHz bat foraging to the south in the alcove between the buildings. Survey concluded.

Plan of Building with Bat Activity





Pellets beneath the west gable

Barn Owl feathers



Interior looking west

Looking west south side



Window in east gable wall

**Gaps can be seen on west gable wall top,
Barn Owl flew from this direction.**





Crevices in stonework south aspect.

Gap on north aspect between byre and house.



Close up of east gable wall from where the owl flew.

C8 Interpretation and evaluation

Occasional bat presence and populations at certain times of year are only best estimates.

C8.1 Presence

Not applicable.

C8.2 Population size

Not applicable.

C8.3 Site status

The byre surveyed has low conservation significance for bats as a roost site. This assessment takes into account the lack of reasonable bat feeding habitat within 500m and the immediate shelter present close to the building, the findings of the survey and the condition of the buildings and the crevices in the building.

The occasional male or non-breeding female bat may be present on the gable wall tops or in a small crevice if present where they may be present at any time throughout the year.

The site has high importance for Barn Owls as little shelter is present elsewhere in the landscape.

C8.4 Constraints

The bat survey was carried out in the period for monitoring active bats however it was well outside the maternity period. No cleaning of the floors or objects had taken place.

D Impact assessment in absence of mitigation

D1 Short-term impacts

Pre-activity impacts are negligible with no major changes being made to the use of the building.

Mid-activity impacts can cause disturbance, injury and death to bats, if no mitigation is carried out, in the eventuality of a bat being located during works.

However mid-activity impacts on bats will be negligible if mitigation such as caution, timing to avoid the hibernation period is carried out.

D2 Long-term impacts: roost modifications - Not applicable

D3 Long-term impacts: roost loss - Not applicable.

D4 Long-term impacts: fragmentation and isolation

There are no proposals that will greatly affect bat flight lines.

D5 Post-activity interference impacts - Not applicable.

D6 Predicted scale of impact

The impact on bats would be minimal on site, negligible in the county and at regional level.

E Land ownership – Mitigation sites

E1 Mitigation site ownership

Mitigation will be carried out on this site.

F References

Altringham J.D. (2003) British Bats. Collins.

Barn Owl Trust (2002) Barn Owls on Site. English Nature

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

Corbet and Harris (1991). The Handbook of British Mammals. Blackwell.

English Nature (2004) Bat Mitigation Guidelines. EN.

Environment Agency's (2007) Pollution Prevention Guidelines: Works and maintenance in or near water: PPG5 <https://www.sepa.org.uk/media/100531/ppg-5-works-and-maintenance-in-or-near-water.pdf>

Joint Nature Conservancy Council (2004) The Bat Workers Manual. JNCC.

Institution of Lighting Professionals/Bat Conservation Trust (2018) Bats and artificial lighting in the UK, Guidance Note 08/18.

Bat boxes : <http://www.nestbox.co.uk/Bat-Box-Single-Chamber-Nest-Box.html>

<http://www.nestbox.co.uk/Improved-Double-Crevise-Bat-Box.html>

Barn Owl Box : <http://www.barnowltrust.org.uk/infopage.html?Id=41>

SECTION 2

DELIVERY INFORMATION//METHOD STATEMENT FOR CONTRACTORS

This statement should be copied to the site owner, architect, clerk of works and to those contractors whose work may affect bat roosts including those involved in demolition, timber treatment, roofing and building works.

Bats are fully protected by law. To avoid breaking the law by damaging or disturbing bat roosts, resulting in possible imprisonment, fines or confiscation of equipment, certain procedures have to be followed.

Legislation

All bats are protected under the Wildlife and Countryside Act (Schedule 5). They are also included in Schedule 2 of the Conservation Regulations 2017. The Act and Regulations make it illegal to:

Intentionally or deliberately kill, injure or capture (take) bats

Deliberately disturb bats (whether in a roost or not)

Damage, destroy or obstruct access to bat roosts

The Countryside and Rights of Way Act 2000 extended the protection given to bats to cover *reckless* damage or disturbance.

A bat roost is interpreted as 'any structure or place which is used for shelter or protection', whether or not bats are present at the time.

Similarly the Barn Owl is protected under Part 1 of the Countryside Act 1981 and is listed on Schedule 1, which gives them special protection. It is an offence, with certain exceptions to:

- Intentionally or deliberately kill, injure or capture (take) any wild barn owl.
- Intentionally take, damage or destroy any wild barn owl nest whilst in use or being 'built'.
- Intentionally take or destroy a wild barn owl egg.
- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on, or near a nest containing young.
- Intentionally or recklessly disturb any dependant young or wild barn owls.

The National Planning Policy Framework (NPPF) 2012 requires Local Planning Authorities (LPA's) to seek to deliver biodiversity enhancement through the planning system. In particular Paragraph 109 includes a statement:

The planning system should contribute to and enhance the natural and local environment by:

'minimising impacts on biodiversity and providing net gains in biodiversity'

Identifying roosts

Pipistrelle the most common bat, favours small crevices and spaces between stonework, timber and roofing felt. Bats are small mammals and when at rest the bodies are only 4-6 cm long, their fur colour can range from brown to pale and dark grey. When disturbed the bat is likely to be torpid and unable to fly effectively for some minutes, because of this they are vulnerable to

injury as they are not fast moving and may fall to the ground breaking bones or be accidentally crushed. Basically, when material from the roof and tops of the walls is removed any crevices underneath should be checked to ensure that no bat has been disturbed.

Other traces that can indicate a past presence of bats are their droppings. These resemble mouse droppings but unlike mouse droppings can be crumbled to dust between finger and thumb. Droppings may be found on wall tops and beneath slates and tiles on top of any sarking.



Photo showing disintegrated bat droppings beneath coping stones. If examined carefully, in the black dust exoskeletons of insects can be seen shining.

A Mitigation strategy

A1 Mitigation Strategy

- Further survey in May to confirm whether there is Barn Owl breeding on site
- To maintain and protect bat populations in the area the following will be carried out:-
- Sensitive timing of destructive works (removal of roof coverings) in autumn to avoid hibernating bats and possible breeding barn owls.
- Provide Method Statement to contractors.
- Advice given for the safe removal of any bats found from harm during the restoration.
- Any bird nest located to be left in-situ until the nestlings have fledged.
- Provision will be made for bats and access retained for barn owls.

Timing

Any development work involving dismantling any stonework and the removal of the existing roof materials will be carried out avoiding the hibernation period (November to March inclusive). Periods of cold weather (below 5°C including night temperatures) will be avoided as any bats present will be in hibernation torpor and be extremely vulnerable. If torpid bats are encountered and disturbance is unavoidable the bat will be taken into care and fed until suitable conditions for release at the site is possible.

Contractors

All contractors will be aware of the following:

- Bats are present in the area and could be present when removing roof coverings etc and may be found torpid on wall tops and in wall cavities if any.
- Table 1 below highlights where bats may be found during the works and the recommendations regarding methodology.
- Any bats found during operations will have the cavity re-covered for its safety and any work in the vicinity will cease. Ruth Hadden to be informed for advice immediately (01661 886562). As only licensed bat handlers can move bats and the contractors are not permitted to handle bats, the bat will be allowed to disperse of its own accord where possible.

- If a barn owl is found unexpectedly during operations the cavity will be re-covered or protected and work will cease in that area. Ruth Hadden to be informed (01661 886562) immediately for assistance.

Table 1 General Methodology for Works

STRUCTURE	METHOD	INSPECT
Roofs	Any repair to ridge tiles, tiles, or roof coverings carried out by hand, lifting vertically to prevent any bats from being crushed. Avoid blocking any external pre-existing gaps by leaving 15 x 20mm access point for bats.	Check any crevices underneath the roofing materials including the underside, as it is removed. Check any crevices around the beams as work proceeds.
Walls/Eaves	Expose the wall tops. Remove any gutters. Dismantle walls, by hand.	Examine for bat droppings and any wall cavities for bats.
Walls	Only point crevices where the full depth can be seen. Leave crevices where present beneath the eaves/wall plate that are 10cm deep and long and 2 to 1cm high	Check deep crevices for the presence of bats using a torch.
Windows/doors	Remove windows, doors and frames by hand, where gaps exist around the frames.	Examine any cavities exposed. Avoid blocking any external pre-existing gaps.

B Works to be undertaken by the ecologist or suitably experienced person.

B1 Capture and exclusion

Only an ecologist licensed to handle bats will handle any bats found on site.

If any bat is found unexpectedly during operations the cavity will be recovered or protected and work will cease in that area. Ruth Hadden to be informed (01661 886562) immediately for assistance. Only Ruth Hadden or a suitably licensed ecologist will handle any bats found on site, which will be subsequently be released on site at dusk.

C Works to be undertaken by the Developer/Landowner

C.1 Bat roosts

C1.1 In-situ retention of roost(s) - Not applicable.

C1.2 Modification of existing roost(s) - Not applicable.

C1.3 New roost creation

An external crevice will be created on the west gable wall top of the building to provide roosting sites for crevice-loving bats. This will be in the form of an access gap measuring 20mm by at least 20mm created between the slates and the water tables into a larger crevice on the wall top below the water table, resembling a 'flattened bottle' measuring c.100 x c.200 x 20mm. This provides a small space that acts as a suitable bat roost for the occasional bat. Please see plan at C1.4 below for location and Appendix 1 for detail.

Bats will roost in wall cavities, on the wall tops; hang from the ridge board or between the roofing felt and slates, depending on the species. Pipistrelle bats, the commonest species, and

Whiskered/Brandt's bats prefer to roost in small cavities often staying on top of the wall and do not enter the open roof spaces. Natterer's, and Brown long-eared bats will use loft spaces.

Timbers will be treated only with 'bat friendly' products, permethrin or cypermethrin as insecticides for example. Further information is available if the contractor requires it.

A traditional bitumen felt or wood sarking that would give bats some grip will be used in the region of the bat roost potential and not a more modern smooth or breathable roofing membrane (BRM) that may fray and entrap bats. No BRM (Breathable Roofing Membrane) to be used in any areas where bats could gain access to roof as a result of new roost provisions.

Any external lights will be set on a motion detector and short timer and be positioned in such a way that they do not shine on any of the bat access positions or the buildings, as this can deter bats. Please see references Bat Conservation Trust/Institute of Lighting Engineers' Guidance 2018.

Barn Owl Provision

Access will be retained through the window of the east gable as at present. The access to measure at least 12cm wide x 25cm high. Any cavities and ledges at the west end of the building to remain as at present.

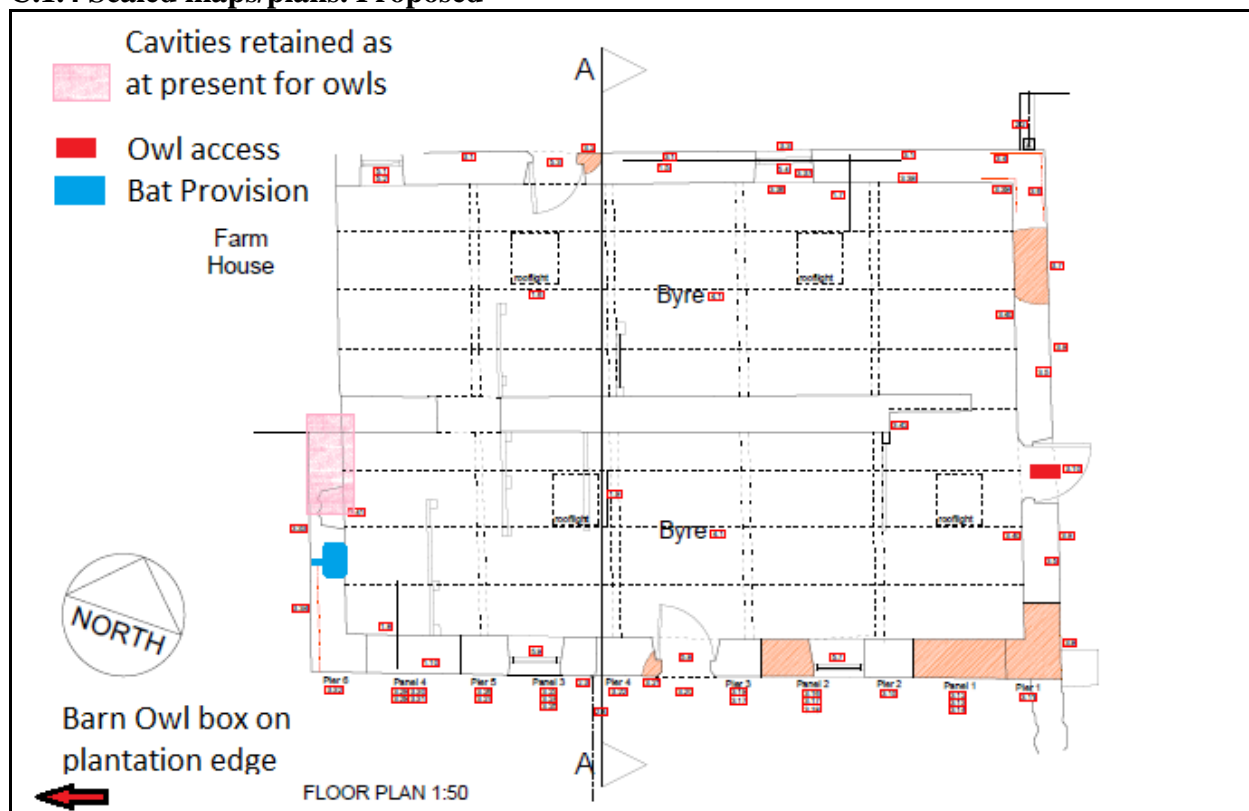
A barn owl nesting box will be erected in a tree on the plantation edge facing east to the southwest of the site within 50m, at least 30 days before work is to commence and disturbance kept to a minimum. This is to prevent the owls from being overly disturbed and moving on by providing an alternative roosting area. Please see plan below for locations, boxes to face away from the prevailing winds, overlooking the fields to the east.

Work commencement (or sudden increase in activity) will be timed to avoid the bird's main breeding season (March to August) as even when the birds are nesting nearby a knock on affect may occur causing the birds to move on.

Other precautions are as follows:

- Before any building work starts a final search of each building involved will be undertaken to ensure that no breeding is taking place, by a suitably qualified ecologist. Barn owls can be tolerant of noise etc when they move in.
- Position static noisy machinery away from the buildings occupied by owls.
- Contractors will not disturb the barn owl box or known nesting site.
- No steep-sided container or water will be left uncovered on site – to avoid the risk of owls drowning.
- The landscape around the buildings to the southwest will be maintained to provide rough grassland as a hunting area for the owls. These areas to be left uncut.

C.1.4 Scaled maps/plans. Proposed



D Post-development site safeguard

D.1 Habitat/site management and maintenance

Not applicable.

D.2 Population Monitoring

Due to low bat activity on site, no monitoring will be required to assess the success of mitigation. (Bat Mitigation Guidelines 2004, Section 7.2) Ruth Hadden available to liaise with the owners as required regarding the mitigation.

D.3 Mechanism for ensuring delivery

Bat mitigation as shown on the plans will be subject to the conditions of the Historic Farm Buildings Pilot Grant Scheme.

E Timetable of works

Not known at present.

Gable wall crevice

