

**GREYSTEAD INSTITUTE - PROPOSED RENOVATION  
BAT AND BARN OWL SURVEY– SUMMER 2017**

**SECTION 1 BACKGROUND AND SUPPORTING INFORMATION**

**A. Executive Summary**

- Greystead Institute was inspected and surveyed to inform a planning application. The present building is derelict, partially two storey, stone built with a slate roof with a wood sarking and is presently unused.
- Planning consent for refurbishment and conversion of the existing building into a holiday let is being sought. On a site visit by the planner in July a barn owl was seen during the day, flying out of the building.
- There are excellent bat feeding habitats present within 1km of the site where bat-feeding corridors are present in the form of wooded river banks and small woodlands.
- Inspection results revealed the presence of no bats or traces of bats. Crevices at the eaves where a previous extension had been present were present though no signs of bats noted. No good bat roost potential within the building or externally indicative of a maternity roost was noted, giving a low bat roost potential, therefore two emergence surveys were carried out.
- The emergence surveys identified Pipistrelle 45kHz and 55kHz bats roosting, the west eaves and base of the chimney plus one bat exiting the north vent.
- The proposals will affect the roost in the west eaves and mitigation will be put in place, to compensate for this loss, however as the destruction of a roosting place for bats will take place the site will be registered under a Low Impact Natural England Licence.
- The occasional bat may also be present in any suitable crevice on the wall tops at any time of the year in small numbers. Timing of any roof works to avoid the hibernation period will ensure that the development has as little negative affect on bat conservation status as possible. A watching brief will be conducted during the removal of the roofing materials in the region of the bat roost crevice such as at the west eaves if necessary and an exclusion device will be fitted.
- A bat box will be positioned on a nearby tree prior to the development commencing.
- **All contractors involved in the development will read the method statement, prior to commencing the work.**
- Traces of barn owls were present throughout the building and barn owls were seen during both surveys with confirmation that the birds are breeding and the building is a nest site. A barn owl loft and nesting box will be provided. Any nesting birds will be allowed access to the nest until the young have fledged.

**B. Introduction.**

**B1 Background.**

Greystead Institute was inspected and surveyed to inform a planning application. The present building is derelict, partially two storey, stone built with a slate roof with a wood sarking and is presently unused.

## B2 Proposed Works.

Planning consent for refurbishment and conversion of the existing building into a holiday let is being sought. The building will be extended and designated on-site vehicle parking will be created. The roof and loft area will remain as it is at present with the incorporation of the Velux windows into the lower slanting sections of the roof.

## C. Survey and site assessment

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

There are no known pre-existing records of bats or barn owls on site.

### C2 Status of species in the local/regional area.

Within 2km roosts of Pipistrelle 45kHz, 55kHz, Brown long-eared and whiskered/Brandt's bats are known 1.5km to the east and 2km to the northeast (2013-2015). Within 2km there are pre-existing records of foraging Noctule area also present 1.5-2km to the east (2008/2013). (Own Records 1986- 2016).

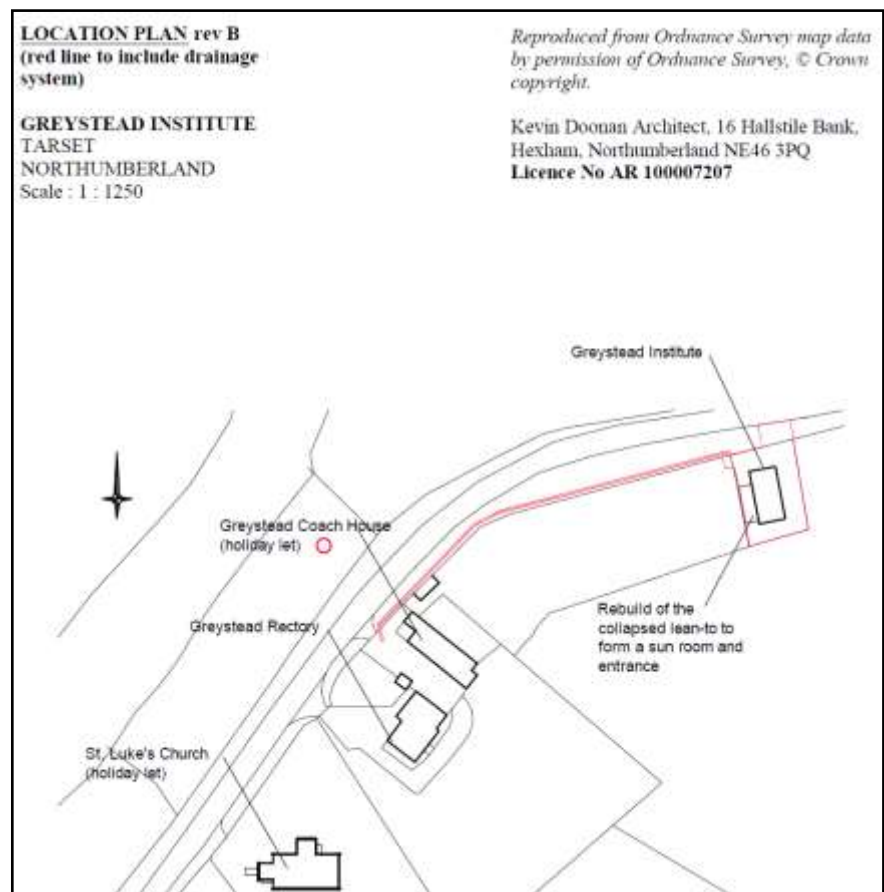
Locally and regionally, the Common Pipistrelle is the most common bat. Both Pipistrelle 45kHz and 55KHz bats are frequent in Northern England, although Pipistrelle bats are the most abundant species they are thought to have declined by 70% between 1978 and 1993 (National Bat Colony Survey). Since 1997 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

This bat and barn owl survey was to determine as far as possible, the presence of bats and owls and their roost sites in the Greystead Institute. The aim is to prevent any bat being physically harmed, to protect all roost sites where possible and to provide mitigation for the creation of roosting sites in the building to maintain conservation status.

### C4 Survey area

The site of the building is located at NY772859 and is shown in red on the location map opposite.



## C5 Habitat description

The former institute building is situated south of the River North Tyne, 2km west of Tasset in Northumberland. The property is surrounded to the north and south by agricultural land consisting of improved grassland with boundaries of fences, walls and some hedges. Extensive rough grassland is present 300m to the south (suitable for barn owl foraging). The River North Tyne runs 100m to the northwest and has wooded banks. Various wooded burns feed into the river providing a wider foraging area.

This area has good sheltered feeding and protection within 100m of the building leading to further feeding corridors for bats throughout the valley. Bat roost potential will be restricted to the scattered houses and villages in the local area and any suitable tree.

## Site photographs



**The west aspect from the northwest**

**Greystead Institute from the northeast**



**South gable from the southeast**

## C6 Field Survey

### C6.1 Methods

A close inspection of the building was made in good light and by using a strong torch as required. The interior and exterior of the building was 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 and possible or definite bat roosting sites were noted.

Beneath ledges the ground was examined for feathers, pellets and birdlime that could indicate occupation by barn owls. Any other evidence of bats was noted.

## C6.2 Emergence Survey

As dusk fell 2 surveyors, each using visual observations and bat detectors (Echo Meter EM3's/Touch) 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	20 July 2017	Externally (both visits), internally first survey only (20min)	Fine, clear and still.
Emergence	20 July 2017	9.15-10.50pm (sunset 9.30pm)	Fine, clear and still. 15-10 °C
Emergence	18 August 2017	8.15-9.40pm (sunset 8.32pm)	Fine, light cloud and slight breeze. 13-12 °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 Ben Whittle and Steve Hadden.

## C7 Results

The Greystead Institute is derelict, two storey stone built with a slated roof that has a wood sarking (Scottish method) and is presently unused. Internally the hall walls and ceiling are plastered and a small loft, 1m high, is present above. There is open access through the broken windows, vents and doorways. No traces of bats were identified however the hall floor and upper floor and balcony is heavy covered by barn owl pellets of mixed ages. A dead owllet was found on the ground floor during the first survey that had been trapped in the doorway by its wing. The loft was examined from the side of the chimney and photographed. A large jackdaw nest is present at the south gable end and on examining the photographs later it was confirmed that barn owls are nesting behind the chimney in the loft.

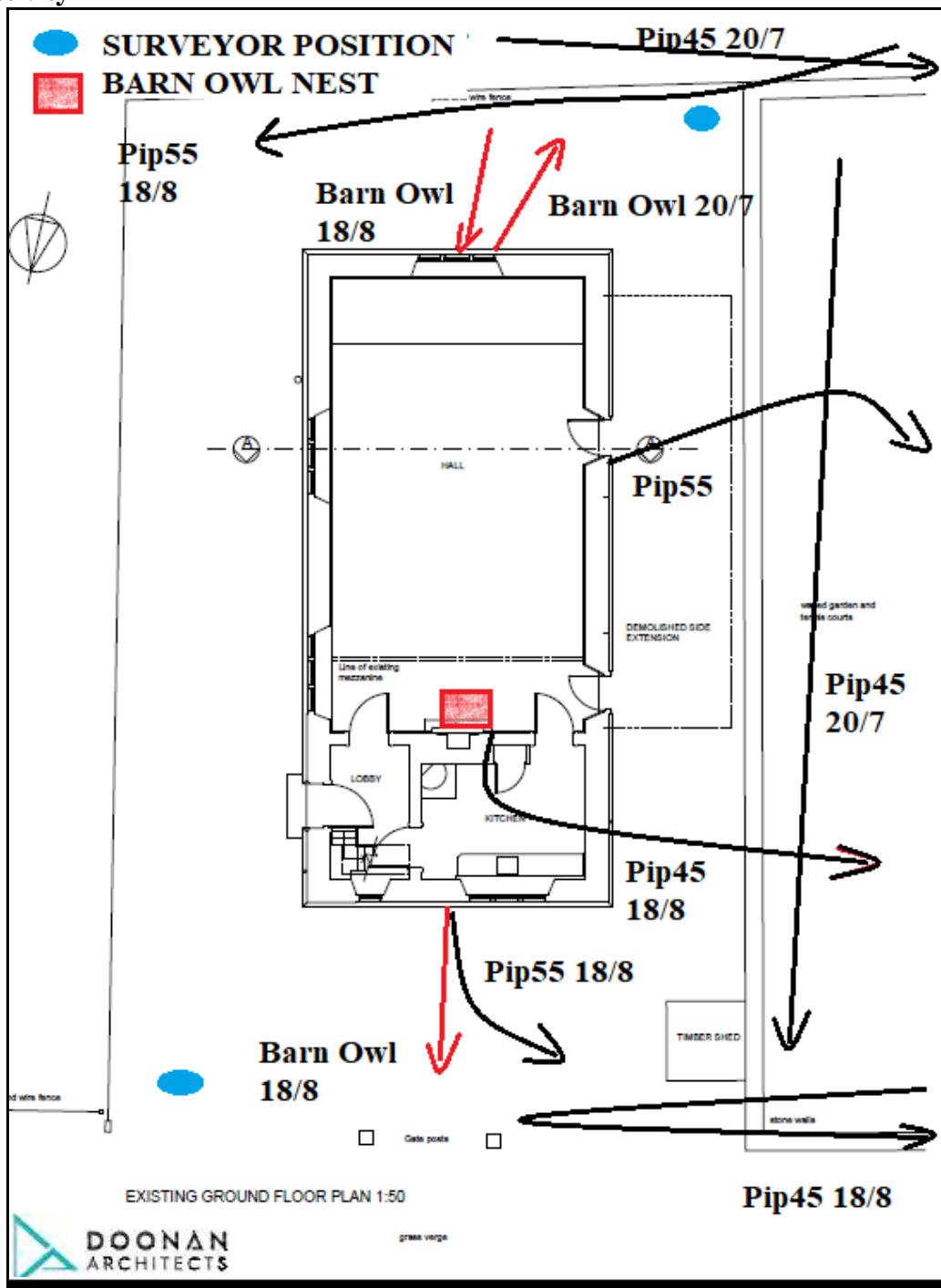
Externally the building is generally well pointed though the occasional crevice is present at the eaves where a previous extension has been present. The roof has crevices below the watertables and around the chimney, no bats or bat droppings were identified on inspection.

At dusk the activity was mainly Pipistrelle 45kHz bats during the July survey with one Pipistrelle 55kHz bat emerging from above the doorway on the west eaves, this bat was also present in August. In August a second Pipistrelle 55kHz bat flew from the north vent (chased by the owl) and 2 Pipistrelle 45kHz bats were also present, emerging from the base of the chimney.

Possible hibernation sites include any deep cavities, if present, in the walls of the building, especially on the cooler side of the building.

Barn owls are nesting on site and were raising a second brood on the August survey however no chicks were heard with the male bird bringing food in for the female bird and quickly leaving again.

**Bat activity**



**Table 1 Emergence survey results.**

<b>Date</b>	<b>Bat Activity</b>
20 July 2017	
9.30pm	Sunset.
9.46pm	Pipistrelle 55kHz bat emerged from the west eaves and flew to the west.
9.52pm	Pipistrelle 45kHz bat foraging to the west from the east.
10.05pm	Barn Owl flew out of the broken windows at the south gable.
10.21pm	Pipistrelle 45kHz bat foraging to the north along the west of the site.
10.50pm	Survey concluded.
18 August 2017	
8.32pm	Sunset.
8.53pm	Pipistrelle 55kHz bat emerged from the west eaves and flew to the west.
9.02pm	Pipistrelle 45kHz bat commuted/foraged along the road from the west and back
9.10pm	2 Pipistrelle 45kHz bats emerged from the ridge near the north chimney and flew to the west.
9.12pm	Pipistrelle 55kHz bat heard not seen to the north.
9.16pm	Barn owl flew in with prey to the south gable vent.
9.19pm	Pipistrelle 55kHz bat emerged from the north gable vent immediately followed by barn owl which flew to the north.
9.27pm – 9.29pm	2 Pipistrelle 55kHz bats foraging to the north.
9.30pm	Pipistrelle 55kHz bat foraging from the east to the west.
9.40pm	Survey concluded as barn owl disturbed by our presence.



**Interior of the hall**

**Loft with barn owl pellets**



**Eggs behind the chimney**



**Dead owlet trapped in door**

**Eaves where Pipistrelle 55kHz bat emerged.**



**Chimney base with a few raised slates and crevices around, two Pipistrelle 45kHz bats emerged from this location**



## **C8 Interpretation and evaluation**

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

### **C8.1 Presence**

The occasional bat is using the building as a day roost. There is always the possibility of the occasional bat being present in any crevice throughout the year including the hibernation period.

### **C8.2 Population size**

<3 Pipistrelle 45kHz bats

<3 Pipistrelle 55kHz bats

### **C8.3 Site status**

The building surveyed has low conservation significance for bats as a roost site at present. This assessment takes into account the derelict nature of the building which may provide crevices for bats, the good feeding habitat in the immediate vicinity and in the surrounding area, the condition of the building and the results of the inspection together with the bat roost potential present.

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

## **C8.4 Constraints**

Timing constraints, as the planning process had commenced prior to conducting the surveys.

### **D Impact assessment in absence of mitigation**

#### **D1 Short-term impacts**

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

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

**D2 Long-term impacts: roost modifications** - Not applicable.

#### **D3 Long-term impacts: roost loss**

If no mitigation is carried out bats would be displaced and possibly harmed during the conversion works of the building in relation to any bats that may use the site. The proposed mitigation is therefore expected to result in only minimal impact on the bats species recorded on site at a local level.

Likewise without prior consideration a barn owl nesting site would be lost giving a high impact.

#### **D4 Long-term impacts: fragmentation and isolation**

There are no proposals that will affect bat flight lines and cause isolation.

#### **D5 Post-activity interference impacts**

Any additional floodlights that would increase light levels and shine on any bat or barn owl potential access points or foraging areas would be a high impact.

#### **D6 Predicted scale of impact**

The impact level on bats will be low-moderate on site, minimal in the county and at regional level. However the proposed mitigation will reduce the impact level to minimal for any bat species present on site.

## **E References**

- Altringham J.D. (2003) British Bats. Collins.  
Barn Owl Trust (2002) Barn Owls on Site. English Nature  
Bat Conservation Trust (2000) Distribution Atlas of Bats in Britain and Ireland. BCT  
Collins J (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn). Bat Conservation Trust, London.  
English Nature (2004) Bat Mitigation Guidelines. EN  
Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2<sup>nd</sup> edition. Bat Conservation Trust  
Joint Nature Conservancy Council (2004) The Bat Workers Manual. JNCC  
Bat boxes : [www.nhbs.com/title/158629/2f-schwegler-bat-box-general-purpose](http://www.nhbs.com/title/158629/2f-schwegler-bat-box-general-purpose)  
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 roof, 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 1994. 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.

#### **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 and compensation**

### **A.1 Summary of mitigation strategy**

To maintain bat populations in the area the following will be carried out:-

- Prior to the development a Schwegler 2F Bat Box will be erected on a tree to the southwest of the buildings (All in same ownership).
- Sensitive timing of roof works commencing April to October inclusive to avoid hibernating bats if possible.
- Contractor induction on bat presence, provide Method Statement to contractors and copy to be held on site.
- Bat licensee (licensed bat ecologist) will supervise the hand-removal of roof materials wherever bats are likely to be present and fit an exclusion device on the west eaves.
- Advice given for the safe removal of any bats found from harm during the development under different weather conditions.
- Provision of an eaves bat crevices (suitable for Pipistrelle and all species of bats) on the west aspect of the renovated building.
- Retention of crevices near the base of the chimney as at present.
- External lighting will be on a relatively short timer, directed away from bat roost access points and flight paths and motion-sensitive only to large objects.
- A barn owl loft to be retained in the building and a nesting box to be provided.

### **Timing**

As a bat roost is present that will be lost the site will be registered under a Low Impact Natural England Licence before the works can proceed. This is applied for after planning consent is granted and can take up to 3 weeks from the receipt of the application. Survey work has to have been undertaken in the current year before application.

Any roof 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) if possible. Periods of cold weather (below 5°C) will also be avoided as any bats present will be in hibernation torpor and be extremely vulnerable.

### **Contractors**

All contractors will be aware of the following:

- Bats are present in the area and could be present when removing roof coverings, ridge tiles, and stone slates 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 Conversion**

<b>STRUCTURE</b>	<b>METHOD</b>	<b>INSPECT</b>
Roofs	Remove any ridge tiles, slate, flashing or roof coverings by hand, lifting vertically to prevent any bats from being crushed.  Removal of any timbers/beams.	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 any stonework required carefully by hand.	Examine for bat droppings and any wall cavities carefully for bats.
Walls - Pointing	<b>Only point crevices where the full depth can be seen. Leave any crevices beneath the eaves that are 10cm deep and long and 2 to 1cm wide as bat roosting crevices</b>	Check deep crevices for the presence of bats <i>using a torch</i> .
Windows/doors	Remove windows, doors and frames by hand, where gaps exist around the frames.	Examine any wall 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.

Ruth Hadden or a suitable ecologist will brief the contractors and carry out a watching brief when the roof coverings are removed in the region of bat roost potential as necessary, or fit an exclusion device to the west eaves to exclude the bat.

If bats are located during the supervised works, the licensed bat handler will capture the bat with thin gloved hands and place in a drawn-string cloth bag/small terrarium lined with kitchen roll enabling the bat to be conveyed to a bat box (locations as shown on plan at C1.4). Injured bats will be immediately taken into care. 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.

If any bat is found unexpectedly during later operations the cavity will be recovered or protected and work will immediately cease in that area. Ruth Hadden to be informed (01661

886562) immediately for assistance. Ruth Hadden or a suitably licensed ecologist will release any bats handled in the previously erected bat boxes or as above. Builders and contractors are explicitly forbidden from handling bats.

The same will apply 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.

## **C Works to be undertaken by the Developer/Landowner**

### **C.1 Bat roosts**

#### **C1.1 In-situ retention of roost(s)**

The crevices at the ridge near the chimney will be retained as at present.

#### **C1.2 Modification of existing roost(s)**

Not applicable.

#### **C1.3 New roost creation**

An eaves crevice will be created at the west eaves of the renovated building. This can simply be a slit 20mm by at least 20mm creating a gap that will be in the form of the required ventilation gap with **no insect mesh** present or a notch in the wall plate/batten on that section of the eaves, **with access to the gap between the roofing felt and slate**. The position will be checked to ensure that the bats can access further that the first batten and a notch cut if necessary. Please see plan at C1.4 for locations and Appendix 1 for details.

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. Brown long-eared and Natterer's bats like to use the roof space, hanging from the ridge beam and only require an access hole. Pipistrelle 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.

Wooden beams and 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 as bats can access a stone slate roof readily 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.

Any external lights will be set on a motion detector with a short timer and be positioned in such a way that they do not shine on any of the bat foraging areas, as this can deter bats.

A Schwegler 2F bat box will be permanently erected on a tree to the southwest of the building prior to the commencement of the development to provide roosting places for bats. The box will be placed on a tree facing southeast at a height of 3m with no overhanging branches obstructing the flight path. This is to ensure that any bats are not left without a roost during the development. Please see plan at C1.4 for locations and References at Section 1 E for details.

## Barn Owls

A Barn Owl nesting box will be erected 3-4m high on a tree to the southwest 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.

In the converted building Barn Owl access through the south vent in the gable wall will be retained to the small loft area. An access point on the east aspect measuring 12x25cm at least and 40cm above the floor of the loft is required to prevent the young owls from falling out. Floor room will measure 50 x 50 cm at least. A loft hatch for cleaning out is also required. Please see references for further details.

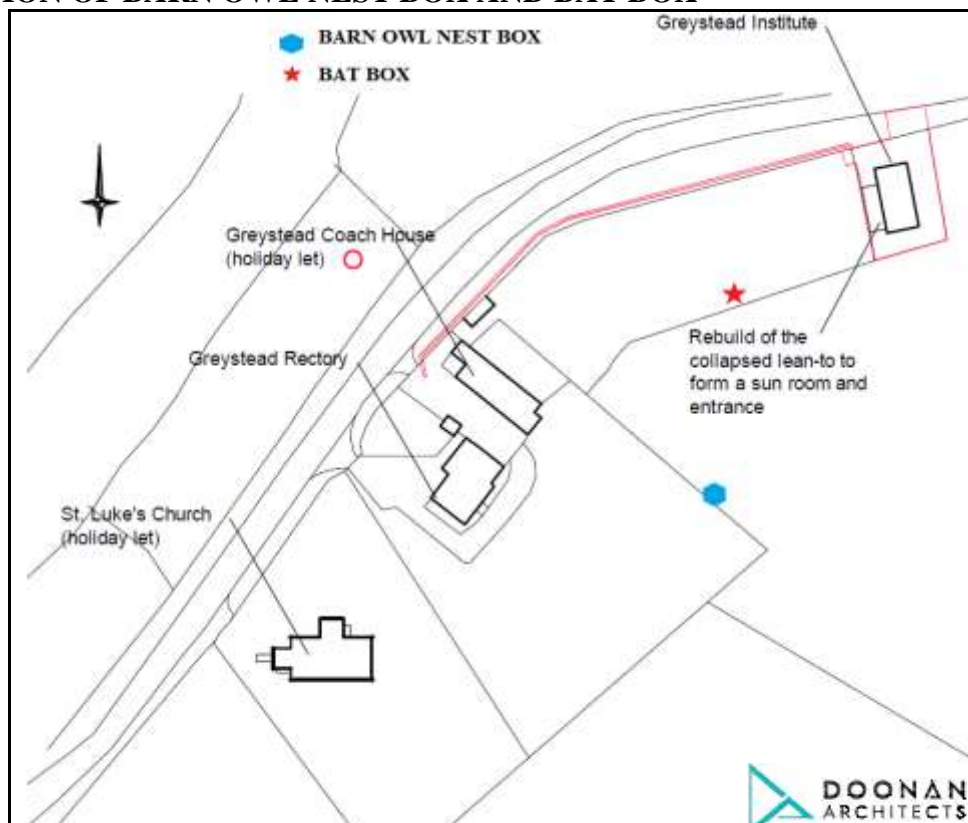
Work commencement will be timed to avoid the bird's main breeding season (March to August) as even when the birds are nesting nearby a knock on affect may occur causing the birds to move on.

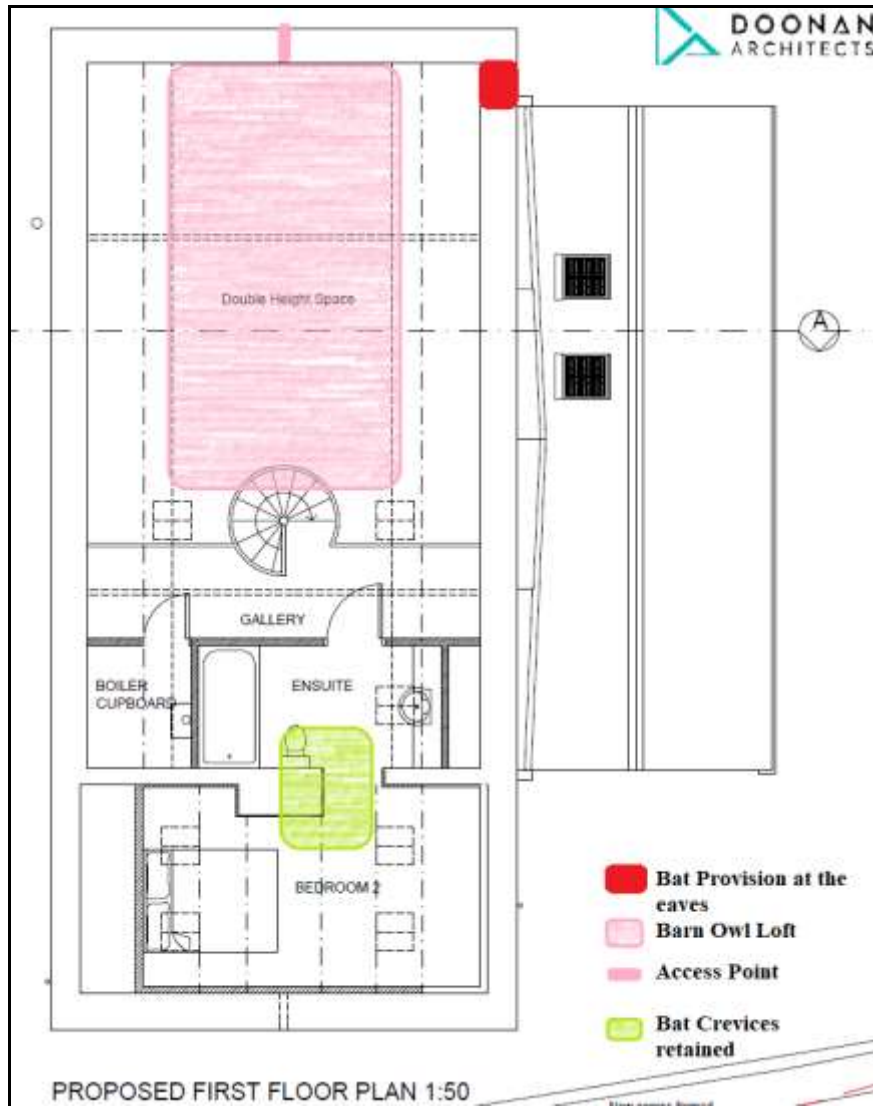
Other precautions are as follows:

- 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 will be maintained and made good after renovation to provide rough grassland ideally around the periphery of the site and to be left uncut. These will act as hunting areas for the owls.

## C.1.4 Scaled maps/plans

### LOCATION OF BARN OWL NEST BOX AND BAT BOX





## D Post-development site safeguard

### D.1 Habitat/site management and maintenance

Any water tanks present in any roof space will be covered to prevent debris and bats from falling in.

### D.2 Population Monitoring

Due to no evidence of bat activity on site no monitoring after completion is required. (Bat Mitigation Guidelines 2004, Section 7.2). Ruth Hadden available to liaise with the developer as required regarding the mitigation and any provision for bats.

### D.3 Mechanism for ensuring delivery

Bat mitigation as shown on the proposals will be subject to the conditions of the planning consent.

## E Timetable of works

As soon as possible..

Eaves Crevice Provision

