

Bat, Breeding Bird and Barn Owl Scoping Survey

Woodleigh House, Aislaby

September 2015



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- 8 OCT 2015

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Bat, Breeding bird and Owl Survey: Woodleigh House, September 2015

Sites:

Woodleigh House
21 Main Street
Aislaby
Whitby
YO21 1SW

Dates:

Initial scoping: 14th January 2009
Scoping update: 17th September 2015
Emergence survey: 22nd September 2015
Scoping report: 23rd September 2015

Client:

Ms. I Franklin
Woodleigh House
21 Main Street
Aislaby
Whitby
YO21 1SW

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Client's agent:

N/A

Planning Authority:

North Yorkshire Moors National Park Authority

Our ref:

15-145

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1. Summary

A bat, barn owl and breeding bird survey was undertaken on the garage and store rooms attached to Woodleigh house. The scoping survey identified potential bat roost habitat within the buildings within internal and external crevices and under raised roof tiles. An Emergence survey confirmed that there are no bat roosts present.

2. Introduction

MAB Environment and Ecology Ltd was commissioned to carry out a bat survey on the garage and store rooms attached to Woodleigh House in Aislaby to accompany a planning application.

A bat scoping survey was previously carried out by MAB Environment and Ecology Ltd. in 2009. No work has been carried out since this time and the site remains unchanged. An updated is now needed for planning requirements.

The report's primary objective is to provide an impact assessment for the development on bats, define any necessary mitigation proposals, and to assess the requirement for a Protected Species Licence. A secondary objective is to assess potential impact on breeding birds.

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3. Methodology

3.1 The property was surveyed and report written by Rachel Midgley and Emma Jackson of MAB Environment & Ecology Ltd. Rachel Midgley (RM) MCIEEM has three years experience of conducting bat surveys, and has been an ecologist for five years, previously with York City Council; she holds a Class Survey Licence WML-A34 (Bat Survey Level 2) registration number 2015-11726-CLS-CLS and is also a trainee volunteer bat worker. Rachel received training in bat mitigation on a BCT course in 2013. Emma Jackson (EJ) has a BSc in Biology and has undertaken emergence surveys for MAB and other consultancies in 2014 and is now employed by MAB.

3.2 The interior and exterior of the buildings were inspected during the day using halogen torches (500,000 candle power), binoculars, ladders, and a flexible endoscope (a Sea Snake LCD inspection scope). All normal signs of bat use were looked for, including bats, bat droppings, feeding waste, entry and exit holes, grease marks, dead bats, and the sounds / smells of bat roosts.

3.3 The buildings were assessed for their degree of potential to support roosting bats. This includes assessing the building design, materials and condition. The location of the site and the surrounding habitat were also assessed for value to bats. This includes proximity of the site to good bat foraging habitat such as woodland and water bodies and if the site is linked to such habitats by linear features like hedgerows, woodland edges or rivers which bats use to commute around the environment.

3.4 Other trees within the site and areas of vegetation were also assessed for value to bats and their importance as foraging and commuting habitat.

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3.5 Bat roost records for a 2km radius around the site were commissioned from the North Yorkshire Bat Group.

3.6 Emergence surveys were carried out using 2 surveyors with ultra-sound detectors (Pettersson D240x). The D240x detector was set to 10x expansion with manual triggering with an Edirol R09 WAV solid state recording device for the time expansion channel, with heterodyne output through the other channel. Time expansion recordings were analysed with BatSound software. Surveyors used were Emma Jackson (as above) and Matt Cooke. Matt Cooke (MC) ACIEEM is a fully trained bat surveyor with 4 years experience with MAB Environment and Ecology Ltd. and holds a Natural England bat survey licence (Licence number: 2015-10981-SCI-SCI).

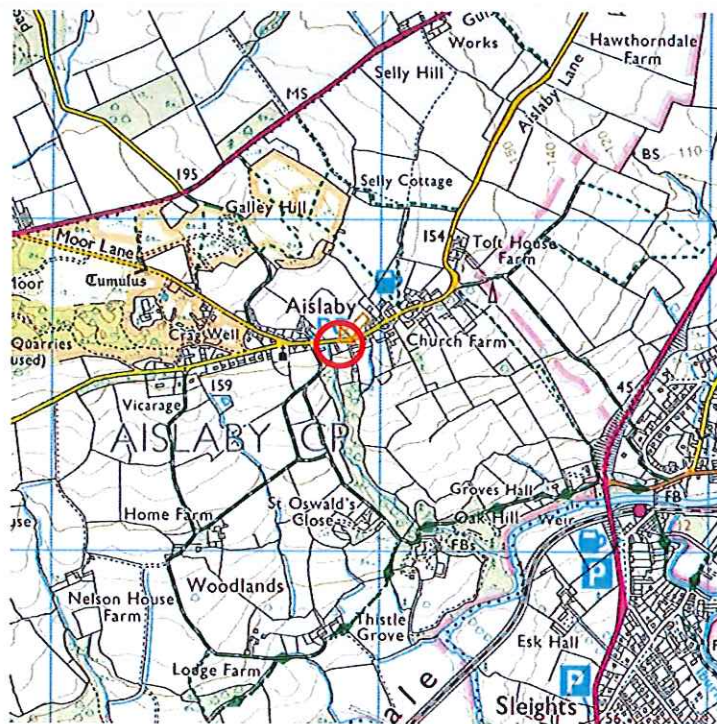
3.7 All signs of breeding bird activity and barn owl (*Tyto alba*) activity were looked for. Signs looked for included white droppings, often vertical down walls or beams; active nests and nesting materials; (birds flying into and out of barns: generally summer only); bird feathers, particularly swift (*Apus apus*), swallow (*Hirundo rustica*) and house martin (*Delichon urbica*), bird corpses, feeding waste (including pellets), and the sound/smell of birds.

4. Constraints

The emergence survey was carried out at a suboptimal time of year when breeding colonies have started to break up.

5. Site Description

The site is situated in the village of Aislaby in North Yorkshire, 4km south west of Whitby near the east coast (central grid reference: NZ 859 087). The landscape surrounding the village is dominated by pasture land. A number of ancient woodlands and areas of deciduous woodland are within 2km of the site.



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Figure 1 – Site location plan.

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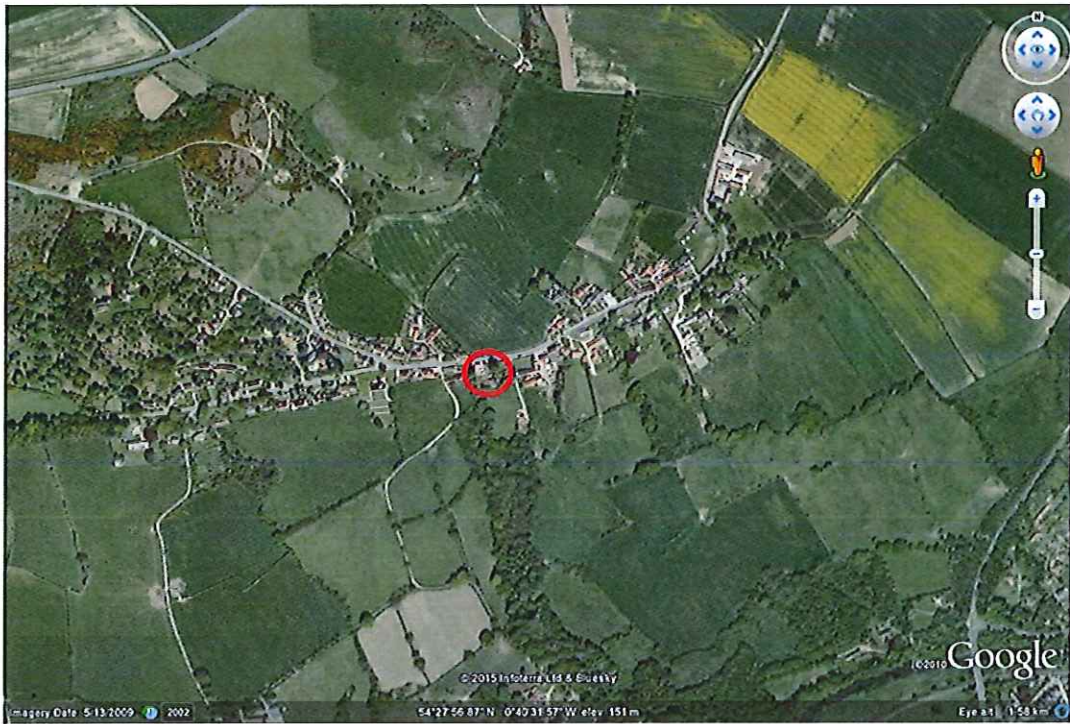


Figure 2 - Aerial view of site and surrounding area.

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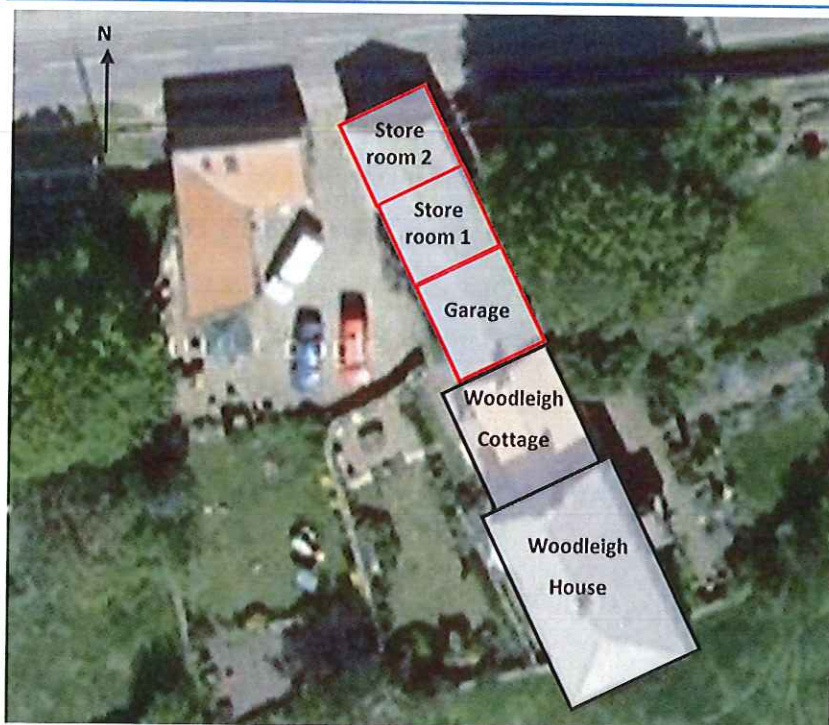
6. Results

6.1 Desktop study

North Yorkshire Bat Group (NYBG)

Records returned from the NYBG had plenty of bat records for the surrounding area but none from the site itself. Full records are attached in Appendix 2.

6.2 Visual inspection



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The garage and store rooms are constructed out of local stone with an unlined slate roof. The garage door is reinforced with breeze blocks internally. The middle store room has a second level which could be accessed and the end store room has, in the past, had a second level but the wooden boards have been removed and only the beams remain.

Internally, the floor is dusty and undisturbed. The internal ridge of all three sections is clear of cobwebs in some places but is not polished. The windows are cobwebby. There are large crevices in the walls and a large gap between the lintels of the door joining the

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garage to the middle store room. Many of the internal crevices are reachable from the floor and so were examined using an endoscope and found to be empty and cobwebby. One dropping was found in store room 2. The dropping was knobbly - typical of a Natterer's or brown long-eared bat, and was not fresh. No other droppings or feeding remains were found in any other part of the building. Two inactive swallows' nests were present in the garage. There were no signs of barn owls.

Externally, there are lots of slipped tiles which are clear of cobwebs, but the external ridge is well mortared. The external walls are reasonably well pointed with a few crevices. Crevices in the east wall were shallow and cobwebby. The west wall had deeper crevices; however most of these were examinable with an endoscope. The eaves were difficult to examine due to guttering, but where they were visible, crevices were present. Ivy covers the gable end and most of the west side and west eaves of store room 2 making it difficult to examine. There is a large crevice in the east corner of the gable end where the ivy has pushed the masonry away which is clear of cobwebs. Externally, the windows are well sealed.

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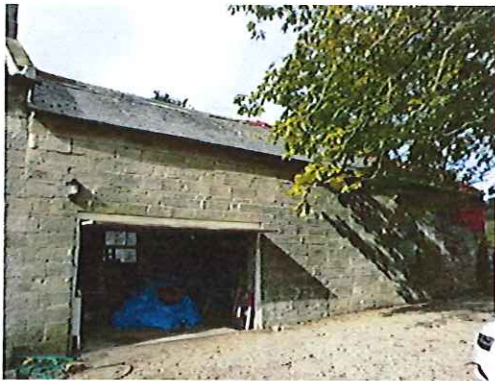


Photo 1: Garage door on east side of building



Photo 2: Northern gable end is covered in ivy making it difficult to identify crevices



Photo 3: Internal ridge of garage is clear in places but not polished



Photo 4: Internal ridge of store room 1

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Photo 5: Cobwebby windows



Photo 6: Internal crevices in garage

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Photo 7: Large internal crevice

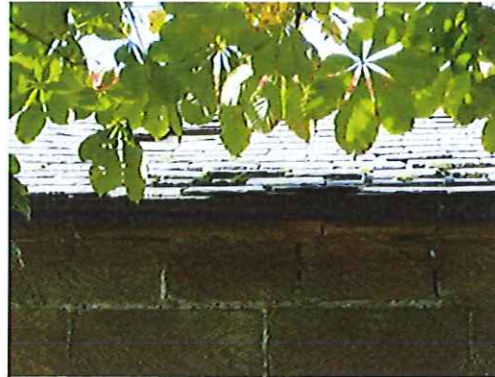


Photo 8: Slipped tiles east side of roof



Photo 9: Slipped tiles west side of roof



Photo 10: Eaves are obscured by guttering. Shallow masonry crevices in east wall



Photo 11: Cobwebs and mouse droppings found within large crevice in west wall



Photo 12: Large internal crevice

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6.3 Emergence surveys

6.3.1 Emergence survey 1

Survey 1 (all buildings)

Date: 22nd September 2015

Start time: 18:30

End time: 20:15

Sunset: 18:59

Conditions: 14°C and wet start, 11°C and dry end. 100% cloud cover. Gentle breeze (BF3). Rain stopped at 19:00.

Surveyors: Matt Cooke (MC) and Emma Jackson (EJ).

Equipment used: 2x Pettersson D240x time expansion ultrasound detector with Edirol R09 recorder.

Results summary:

No emergences from the building. Common pipistrelle bats were heard but not seen between 19:18 until 20:04.

Observations:

Surveyor	Time	Species	Activity
MC	19:18	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:26	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:32	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:41	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:48	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:50	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:57	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	19:59	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen
EJ	20:04	Common pipistrelle, <i>Pipistrellus pipistrellus</i>	Heard not seen

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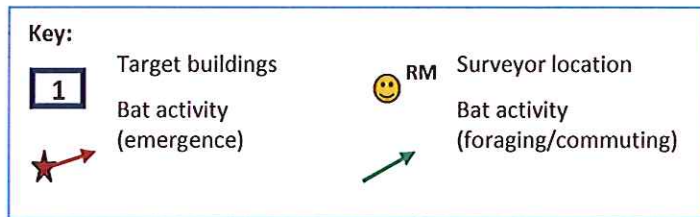
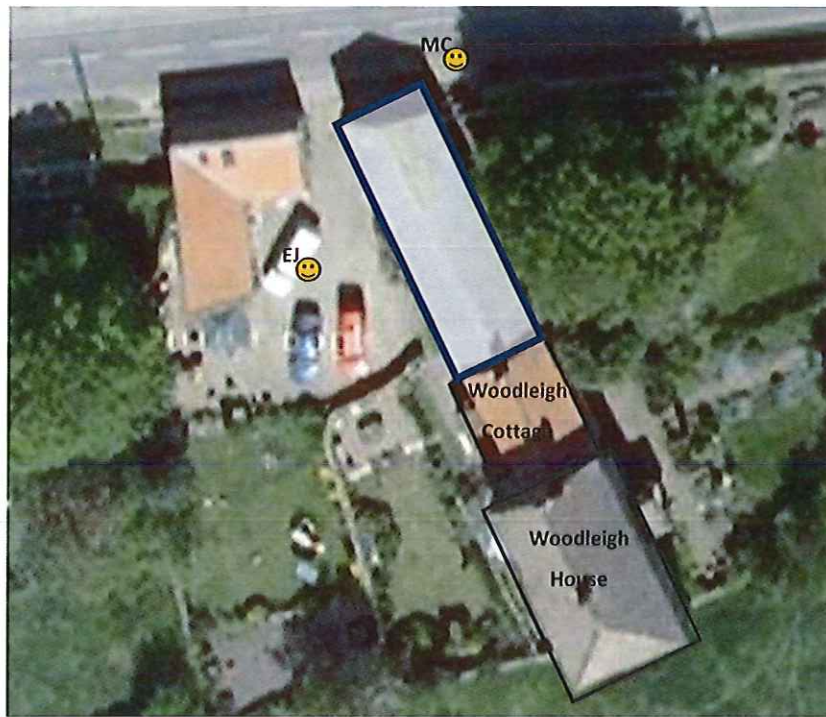


Figure 3 – Surveyor locations and bat activity recorded during survey 1 (22/09/2015).

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7. Discussion and analysis

The external wall crevices and loose roof tiles offer potential solitary summer roosting and hibernation habitat for crevice dwelling bat species such as pipistrelles (*Pipistrellus sp.*), whilst the open roof spaces provide suitable roosting habitat for certain bat species, such as brown long-eared bats (*Plecotus auritus*) and some *Myotis spp* that commonly fly within buildings.

Bat presence in crevices would have been evident during the scoping survey as most crevices were examined fully and no signs of bats were found. The emergence survey confirmed that there were no bats present.

The single bat dropping found in store room 2 was not fresh, and is likely to have been left by a foraging bat in a single visit. Because of the dry undisturbed conditions found internally in the garage and store rooms, had a roost been present bat droppings would have accumulated and been visible to the surveyors.

8. Impact assessment

There will be no impact on protected species from the proposed works.

9. Mitigation & Compensation

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9.1 Mitigation summary

If work has not commenced before mid-May 2016, updated survey work will be required to confirm that use of the site by bats has not changed significantly.

10. Information concerning bat protection and the planning system

10.1 Relevant Legislation. All bat species are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended), the Countryside and Rights of Way Act 2000 and the Habitat Regulations 2010.

Under the WCA it is an offence for any person to intentionally kill, injure or take any wild bat; to intentionally disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection; to intentionally damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; to be in possession or control of any live or dead wild bat, or any part of, or anything derived from a wild bat; or to sell, offer or expose for sale, or possess or transport for the purpose of sale, any live or dead wild bat, or any part of, or anything derived from a wild bat.

Under the Habitat Regulations 2010, it is an offence to (a) deliberately capture, injure or kills any wild animal of a European protected species (EPS), (b) deliberately disturb wild animals of any such species, (c) deliberately take or destroy the eggs of such an animal, or (d) damages or destroys a breeding site or resting place of such an animal. Deliberate disturbance of animals of a European protected species (EPS) includes in particular any disturbance which is likely to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young; or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

Prosecution could result in imprisonment, fines of £5,000 per animal affected and confiscation of vehicles and equipment used. In order to minimise the risk of breaking the law it is essential to work with care to avoid harming bats, to be aware of the procedures to be followed if bats are found during works, and to commission surveys and expert advice as required to minimise the risk of reckless harm to bats.

10.2 Licences. Where it is proposed to carry out works which will damage / destroy a bat roost or disturb bats to a significant degree, an EPS licence must first be obtained from the Natural England (even if no bats are expected to be present when the work is carried out). The application for a license normally requires a full knowledge of the use of a site by bats, including species, numbers, and timings. Gathering this information usually involves surveying throughout the bat active season. The licence may require ongoing monitoring of the site following completion of the works.

Licences can only be issued if Natural England are satisfied that there is no satisfactory alternative to the development and that the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

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10.3 Planning and Wildlife. The March 2012 National Planning Policy Framework (NPPF) has replaced PPS9 (Planning Policy Statement on Biodiversity and Geological Conservation) as the relevant national planning guidance in relation to ecological issues.

Para 109 of NPPF states that the planning system should “contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”.

Para 117 of NPPF states that the planning system should “promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species, populations, linked to national and local targets”.

Para 118 of NPPF states that “When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site’s notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- opportunities to incorporate biodiversity in and around developments should be encouraged;
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.

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Para 119 of the NPPF makes it clear that “The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or

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determined". Therefore EPS will still be a material consideration when considering sustainable developments.

The accompanying ODPM / Defra Circular 06/2005 remains pertinent; circular 06/2005 is prescriptive in how planning officers should deal with protected species, see paragraphs 98 and 99:

- The presence of a protected species is a material consideration when considering a proposal that, if carried out, would be likely to result in harm to the species or its habitat (see ODPM/Defra Circular, para 98)
- LPAs should consider attaching planning conditions/entering into planning obligations to enable protection of species. They should also advise developers that they must comply with any statutory species protection issues affecting the site (ODPM/Defra Circular, para 98)
- The presence and extent to which protected species will be affected must be established before planning permission is granted. If not, a decision will have been made without all the facts (ODPM/Defra Circular, para 99)
- Any measures necessary to protect the species should be conditioned/planning obligations used, before the permission is granted. Conditions can also be placed on a permission in order to prevent development proceeding without a Habitats Regulations Licence (ODPM/Defra Circular, para 99).
- *The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances.*

Further to NPPF and ODPM Circular 06/2005, Section 40 of the Natural Environment and Rural Communities Act (2006) states that 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Section 40(3) also states that 'conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat'.

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11. References

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- Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System.
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- University of Bristol 2005. *Online Guide to the bats of Britain*.
<http://www.bio.bris.ac.uk/research/bats/britishbats/index.htm>

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Appendix 1: Standard good working practices in relation to bats

Bats are small, mobile animals. Individual bats can fit into gaps 14-20mm wide. They can roost in a number of places including crevices between stonework, under roof and ridge tiles, in cavity walls, behind barge boards, in soffits and fascias and around window frames. Builders should always be aware of the potential for bats to be present in almost any small gap accessible from the outside in a building. The following guidelines are provided in order to reduce the risk of harm to individual bats.

- Roofs to be replaced, or which are parts of a building to be demolished, should be dismantled carefully by hand. Ridge tiles, roof tiles and coping stones should always be lifted upwards and not slid off as this may squash/crush bats.
- Re-pointing of crevices should be done between April and October when bats are active. Crevices should be fully inspected for bats using a torch prior to re-pointing.
- Any existing mortar to be raked should be done so by hand (not with a mechanical device).
- Look out for bats during construction works. Bats are opportunistic and may use gaps overnight that have been created during works carried out in the daytime.
- If any bats are found works should stop and the Bat Conservation Trust (0845 1300 228) or a suitably qualified bat ecologist should be contacted.

If it is necessary to pick a bat up always use gloves. It should be carefully caught in a cardboard box and kept in a quiet, dark place. The Bat Conservation Trust or a suitably qualified bat ecologist should be contacted.

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Appendix 2: NYBG bat roost records

Species	Site	Grid ref.	Quantity	Date	Comment
Unknown	6 Esk Valley, Grosmont	NZ8406		03 Sep 1985	Summer roost
Unknown	Low Newbiggin House, Aislaby, Whitby	NZ8407	300	17 Jun 2002	Maternity roost
Pipistrelle species	The Intake, Aislaby, Whitby	NZ8508	20	06 Jul 2002	Summer roost
Brown Long-eared Bat	The Intake, Aislaby, Whitby	NZ8508	15	06 Jul 2002	Summer roost
Unknown	Sleights	NZ8606		04 Sep 2004	2 dead bats found under bed.
Unknown	Woodlands Nursing Home, Woodlands Drive, Sleights	NZ861080		18 Feb 1988	
Unknown	Toft House, Aislaby	NZ863089		12 May 2005	Droppings and some emergence observed
Brown Long-eared Bat	117 Coach Road, Sleights, Whitby	NZ866074	1	15 Aug 2001	Bat seen in loft.
Common Pipistrelle	Sleights new bridge	NZ867081		17 Sep 2005	Feeding under arch with other species
Pipistrelle species	5 Orchard Road, Sleights, Whitby	NZ868077		13 Jul 1997	Roost
Unknown	2 Carr Hill Lane, Briggswath, Whitby	NZ869083	1	02 Sep 2002	Bat on bathroom wall.
Unknown	13 Carr Hill Lane, Briggswath, Whitby	NZ869086	1	16 Aug 2002	Bat in house.
Unknown	45 Iburndale Lane, Sleights, Whitby	NZ870072	12	02 Aug 2001	Summer roost.
Unknown	65/67 Birch Avenue, Sleights	NZ870073		23 Sep 1986	Bat evidence, but none seen.
Common Pipistrelle	The Old Smithy, Dunsley	NZ858109	1	21 Sep 2007	Feeding
Noctule Bat	The Old Smithy, Dunsley	NZ858109	1	21 Sep 2007	In flight
Myotis bat sp.	The Old Smithy, Dunsley	NZ858109	1	21 Sep 2007	Feeding

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**STRUCTURAL APPRAISAL
OF
REDUNDANT OUTBUILDING
AT
WOODLEIGH HOUSE, AISLABY, WHITBY
NORTH YORKSHIRE
FOR
MS I FRANKLIN**

1.0 BRIEF:-

This report has been prepared on the instruction of Ms Franklin. The report is required to provide supporting information regarding a planning application to convert a redundant outbuilding into a dwelling.

The objective of this report is:-

- to provide a general appraisal of the current structural status of the outbuilding.
- to comment on the structural implications, if any, of the proposed change of use.

This report is NOT a full structural specification for carrying out the works.

We have not inspected the woodwork or other parts of the structure which are covered, unexposed or inaccessible and we are, therefore, unable to report that any such part of the property is free from defect.

Dimensions noted in this report are rough visual estimates for identification purposes only. No actual measurements have been taken at the site.

2.0 INTRODUCTION:-

The outbuilding that is the subject of this report is a stone built building situated a few metres west of Woodleigh House, Main Road, Aislaby near Whitby

The building is a long single storey garage / workshop with hay loft over and has no doubt had a variety of uses in the past.

2.1 Grid Reference:-

The Ordnance Survey grid reference is NZ 859 / 086.

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2.2 Date of Visit:-

The site was visited for the purpose of this report on 1st October 2015.

We have inspected this outbuilding on a number of occasions in the past and therefore have the benefit of reference to past records/notes.

The site was previously visited on the 9th January 2009, and also 1st March 2010.

This report is intended to serve as an update to previous appraisals.

2.3 Weather:-

The weather was mild and dry.

2.4 Topography:-

The site is situated in the village of Aislaby near Whitby.

The land is reasonably level over the site area.

We would describe the site as rural and reasonably exposed to inclement weather.

There are some significant mature trees close to the building.

2.5 Geology:-

The British Geological Survey one-inch series sheet 44 indicates that the subsoil should comprise boulder Clay overlying shale and Sandstone beds of the Lower Oolite series.

At this stage no subsoil investigations have been carried out.

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3.0 GENERAL:-

3.1 Type of Building:-

Although we would describe the building as a traditional long single storey stone built outbuilding, we note that approximately 50% is effectively 2 storey incorporating an old a hay loft/tack area.

Walls are of solid stone construction typically 450mm thick.

The traditional timber purlin roof is covered with slates.

3.2 Overall Stability:-

Overall stability is generally provided by the external masonry walls. There are also at least 2 internal cross-walls to provide additional lateral stability.

3.3 Past Alterations:-

Past alterations appear to have been minimal.

The opening for the garage door appears to be relatively recent.

4.0 OBSERVATIONS:-

Where appropriate we have classified the visible signs of damage/movement to the building in accordance with Building Research Establishment digest no. 251 (BRE 251) "Assessment of damage to low-rise buildings". The digest has six categories '0' (negligible) to '5' (very severe).

All dimensions quoted in this report are approximate for identification purposes only.

4.1 Front (Northern) Elevation:-

The main elevation is approximately 15m long x 4 metres high. At the left (Eastern) end, the building is attached to a terraced cottage. Woodleigh house is further to the East.

The main wall is coursed sandstone, traditional solid construction, approximately 450mm thick.

At the junction with the adjoining cottage to the East there is a vertical joint at high level. This joint does not continue down to ground level. There is evidence of some past, lateral spread of the roof at eaves level. The pointing did not suggest to us that there had been any significant recent movement.

There is a wide opening for a garage door. Masonry above this is supported by a relatively modern steel beam. Internal inspection suggests that the masonry was rebuilt when the opening was created some time ago. Guttering is supported by traditional steel spikes.

There are very minor undulations to the line and level of the masonry generally. Masonry would benefit from some quite minor general re-pointing.

Some of the Western end is covered with Ivy plant. There is some minor, local damage, (loose pointing), which we would attribute to the vegetation.

There are quite noticeable undulations to the ridge line. We would attribute this to past lateral spread of the common rafters at eaves level. Evidence of recent movement appears to be modest.

The junction of the roof with the party wall at the Eastern end would benefit from the installation of new lead flashing.

In accordance with BRE 251 we would classify the visible evidence of damage on this elevation as category 2 (slight) for which the digest remarks "...some external pointing required to ensure weathertightness. Doors and windows may stick slightly....".

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4.2 End (West) Gable:-

The gable wall is approximately 6m long and includes one modest window opening at high level.

There is stone tabling to the verge.

Generally the whole of this elevation is covered with an Ivy plant. The plant has clearly covered this wall for many years and, considering this, the amount of actual damage is reasonably minor. Some pointing required, joinery to be replaced.

In accordance with BRE 251 we would classify the visible evidence of damage on this elevation as category 2 (slight) for which remarks are as noted above.

4.3 Rear (Southern) Elevation:-

This elevation faces directly onto neighbouring properties.

Along the length of this elevation there are 3nr. door openings, 2 window openings and a hayloft hatch at eaves level.

The Ivy plant that covers much of the Western end of the building is rooted below the Western window.

Above the Western window, below the Ivy growth, we noted vertical cracking. We felt that this cracking was probably due to deterioration of the old roof timbers around a relatively flimsy roof truss at this location. Damage is probably being aggravated by the Ivy plant.

There is minor, vertical, cracking at low level between the West and central door.

A timber lintel over the Eastern door is in poor condition and would benefit from being replaced with a new stone lintel.

The junction with the neighbouring cottage to the East did not indicate to us evidence of significant recent movement to cause us serious concern.

Generally this elevation is in need of modest re-pointing.

In accordance with BRE 251 we would classify the visible evidence of damage on this elevation as category 3 (moderate) for which the digest remarks "*...these cracks require some opening up and can be patched by a mason. ...Repointing of external brickwork and possibly a small amount of brickwork to be replaced...*".

4.4 Internal:-

Internal ground floor appears to comprise of stone flags.

On the Eastern party wall there is evidence of at least 3nr., main, vertical cracks below the purlins and ridge. These have been relatively recently re-pointed. Signs of recent movement appear to be quite minimal. The cracks are indications of past lateral spread of the roof. We will be advising that a number of stainless steel tie bars be installed, to the bed joints of the masonry across these cracks, as a prudent measure. Improvements to the roof support, such as a steel ridge beam, would also reduce the risk of further movement associated with roof spread.

Internal cross walls appear to be of substantial, solid construction. There is some evidence of vertical cracks where these internal partitions meet the external walls. This damage movement also relates to past lateral spread of the roof.

Slates are supported by common rafters, (typically 75 x 75mm @ 450mm crs.). These rafters are quite flimsy and old. The roof would benefit from replacement of common rafters with a slightly deeper section.

5.0 CONCLUSIONS:-

The building is effectively complete and intact.

Taking into account the age and past use of the building, we would describe the essential structure as being in a reasonably repairable condition.

There has been deterioration of the roof in the past resulting in lateral spread at eaves level and indicated by the undulating ridge line.

Timberwork generally needs replacing and, in some locations, is inherently flimsy.

There are a number of mature trees very close to the building. Evidence of actual damage due to these trees appears quite minor.

The building has stocky proportions with few and modest openings and, therefore, overall stability characteristics may be described as inherently good.

The proposed domestic use of the building is unlikely to produce loadings in excess of those that the building has already been subjected to. The essential structure should be capable of accommodating conversion works.

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6.0 RECOMMENDATIONS:-

6.1 Roof:-

- Improve support to roof, preferably with new common rafters. Consider installing steel ridge beam.
- Roof structure to be replaced and to incorporate:
 - tanalised battens on roofing felt
 - deeper common rafters to provide space for insulation/ventilation etc.
 - all rafters should either be tied to ceiling joists at eaves level or purlins/ridge beam should be designed by a Chartered Structural Engineer.
 - new flashings and an overhaul/replacement of rainwater goods.

6.2 Walls:-

- Externally rake out all joints to a depth of 15mm and re-point with a mortar no stronger than 1:2:9 cement:lime:sand.
- Install suitable dpc course e.g. chemical injection system by a specialist contractor able to provide an appropriate guarantee.
- Internal timber lintels to be replaced with pre-cast concrete type.
- Install 16nr stainless steel helical bars to bed joints of internal masonry across vertical cracks. Distribute evenly (12nr eastern party wall & 6nr below purlins west internal wall adjacent garage).

Cut out horizontal bed in masonry 50 mm deep. Fix 6 mm diameter stainless steel 'helifix' resin anchor bars 1000mm long or similar approved. Repoint with gauged mortar to match existing.

6.3 Floors:-

- Replace existing rough floors with new concrete slab on dpm on hardcore bed. Insulation & finishes to client/architects specification.

Signed for
Richard Agar Associates Limited,

- 8 OCT 2015

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