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- 6 APR 2010

**STRUCTURAL APPRAISAL**  
OF  
**REDUNDANT OUTBUILDING**  
**WOODLEIGH HOUSE, AISLABY**  
WHITBY, NORTH YORKSHIRE  
FOR  
**MR A LITTLE**

Prepared by

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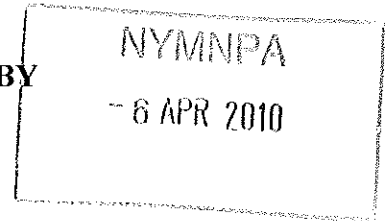
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**TABLE OF CONTENTS**

1.0	BRIEF:- .....	2
2.0	INTRODUCTION:-.....	2
2.1	Grid Reference:- .....	2
2.2	Date of Visit:- .....	2
2.3	Weather:- .....	3
2.4	Topography:- .....	3
2.5	Geology:- .....	3
3.0	GENERAL:- .....	3
3.1	Type of Building:- .....	3
3.2	Overall Stability:- .....	3
3.3	Past Alterations:- .....	3
4.0	OBSERVATIONS:- .....	4
4.1	Front (Northern) Elevation:-.....	4
4.2	End (West) Gable:-.....	5
4.3	Rear (Southern) Elevation:-.....	5
4.4	Internal:- .....	6
5.0	CONCLUSIONS:-.....	6
6.0	RECOMMENDATIONS:- .....	7
6.1	Roof:-.....	7
6.2	Walls:- .....	7
6.3	Floors:- .....	7

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**1.0 BRIEF:-**

This report has been prepared on the instruction of Mr Little. 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.

**2.2 Date of Visit:-**

The site was originally visited for the purpose of this report on the 9<sup>th</sup> January 2009 and has been visited again on 1<sup>st</sup> March 2010 to update notes and records.

**2.3 Weather:-**

The weather was cold and damp. There have been some significant periods of wet and windy weather recently.

**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.

NYMNPA

- 8 APR 2010

**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.

NYM/NPA  
- 6 APR 2010

#### 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 minimal.

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....*".

#### 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 minimal.

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 windows and a hayloft hatch at eaves level.

NYMNPA

26 APR 2010

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.

NYMNPA

- 6 APR 2010

**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:-**

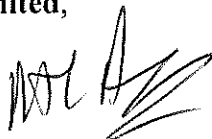
- Externally rake out all joints to a depth of 15mm and re-point with a mortar no stronger than 1:2:9 cement:lime:sand.
- Install suitable dpc course e.g. chemical injection system by a specialist contractor able to provide an appropriate guarantee.
- Timber lintels to be replaced with pre-cast concrete 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,



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6 APR 2010