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STRUCTURAL APPRAISAL
OF
OUTBUILDINGS
AT
COBB FARM, RAVENSCAR
WHITBY, NORTH YORKSHIRE
FOR
MR P HEAVEN

NYMNPA
14 OCT 2010

Prepared by

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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 Buildings:-.....	3
3.2	Overall Stability:-	3
4.0	OBSERVATIONS:-	4
4.1	FORMER STABLES:-	4
4.1.1	External:	4
4.1.2	Internal:.....	4
4.1.3	Roof:	5
4.2	FORMER BARN:-	5
5.0	CONCLUSIONS:-.....	5
6.0	RECOMMENDATIONS:-	6
6.1	Roof:-.....	6
6.2	Walls:-	6
6.3	Floors:-	6

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14 OCT 2010

NYM / 2010 / 0706 / FL

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1.0 BRIEF:-

This report has been prepared on the instruction of Mr P Heaven. 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:-

There are two large former agricultural buildings at this site. To the north, a former stable block measuring approx. 8 x 18m on plan. To the south, a barn measuring approx. 12 x 18m on plan.

We understand that the current proposals are to convert the former stables (north building) into a dwelling and to modify the barn (south building) to form a new stable block.

2.1 Grid Reference:-

The Ordnance Survey grid reference is NZ 977 / 004.

2.2 Date of Visit:-

The site was visited for the purpose of this report on the 1st October 2010.



NYM / 2010 / 0706 / FL

2.3 Weather:-

The weather was fresh and damp.

2.4 Topography:-

The site is situated in an elevated and rural area of the North York Moors National Park.

The land slopes moderately down towards the south-east, is approximately 210 metres above sea level and 1km from the North East coast.

Vegetation around the building is minimal, comprising rough grass.

We would describe the site as rural, isolated and exposed to inclement weather from the North Sea.

2.5 Geology:-

The British Geological Survey one-inch series sheet 44 indicates that the subsoil should comprise Shale & Sandstone beds of the Lower Oolite series.

At this stage no subsoil investigations have been carried out.

3.0 GENERAL:-

3.1 Type of Buildings:-

The buildings are substantial detached agricultural store / stables.

The former stable block has concrete block external walls and internal stall partitions and corrugated sheeting covers light steel trusses.

The barn is a traditional light steel portal frame construction covered with corrugated sheeting to the roof and timber boarding to the sides.

3.2 Overall Stability:-

Overall stability to the former stables is provided by the masonry walls.

Stability of the former barn is provided by the steel framework.



NYM / 2010 / 0706 / FB

4.0 OBSERVATIONS:-

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

4.1 FORMER STABLES:-

This building is to be converted into a dwelling.

4.1.1 External:

The external walling appears to be 200mm thick solid, concrete blocks.

The front (East) elevation has been covered with a rough cement render and painted green.

There are 2 door openings at ground level. At high level there is a large blocked-up window/vent opening.

There is some very minor horizontal cracking near the Northern eaves of the front elevation.

Side elevations comprise plain, coursed concrete blockwork. Some former window/vent openings have been blocked up.

On the rear elevation there is one small door opening at ground floor level. Two others have been blocked/bricked up. There is also an opening for a large vent at high level. A concrete lintel on the rear elevation is spalling and exposed steel is corroding.

Foundations have not been specifically investigated. It appears that walls have been constructed off a large mass concrete slab.

Some external lintels are showing signs of deterioration due to age and the very exposed location.

4.1.2 Internal:

There is a row of stalls (stables) each side divided by approximately 2m high solid blockwork partitions. These partitions provide useful buttressing to the external walls.

The concrete floor is rough, uneven concrete and will need either replacing or covering with a levelling screed, insulation and a new floor screed.

There are a variety of cracks in the floor. We would attribute these to a combination of the large area involved and the lack of good workmanship. These cracks are old and did not give us cause for serious concern.

NYMNPA
14 OCT 2010

NYM / 2010 / 0706 / FL 1

Some concrete lintels to the side and rear elevations were in poor condition with horizontal cracks, spalled concrete and occasional exposed reinforcement. These damaged lintels need replacing.

4.1.3 Roof:

The roof is covered with cement type corrugated sheeting supported on steel angle purlins on 4 no. steel, angle trusses. This is a light steel roof. Although generally corroded the structure is technically still serviceable.

In order to provide support for a traditional pantiled covered roof, it will be necessary to replace the roof structure with new (possibly timber) trusses at closer centres.

4.2 FORMER BARN:-

This building is to be converted into a new stable block.

This is a simple, steel portal frame structure, with concrete block dado walls at low level and vertical timber boarding to the elevations.

The roof is covered with corrugated cement type sheeting supported on timber purlins.

The concrete floor appears relatively recent, but does not cover the full area.

The structure appears quite serviceable and could be used as a new stable block with effectively no or very little alteration.

5.0 CONCLUSIONS:-

For the stable block which is to be converted into a dwelling; It will be essential to maintain a good number of cross-walls to ensure stability of the external masonry. The layout indicated on architectural drawing no. 00/07, appears to allow this.

The old barn, which is to become new stables is a steel portal frame and, therefore, has it's own inherent stability. Layout of internal partitions is structurally optimal.

In order to provide support for a pantile covered roof rather than corrugated sheeting, it will be necessary to replace the existing roof structure with new timber trusses at closer centres, (typically 450 to 600mm).

The proposed domestic use of the building is unlikely to produce loadings in excess of those that the building has already been subjected to.

NYMNPA
14 OCT 2010

6.0 RECOMMENDATIONS:-

NYM / 2010 / 0706 / FL 1

6.1 Roof:-

- New roof trusses required to the former stable block in order to provide support to a pantile covered roof (rather than existing corrugated sheeting)

6.2 Walls:-

- Additional leaf of masonry to external walls in order to provide insulation etc for domestic occupation.
- Several existing concrete lintels to be replaced.

6.3 Floors:-

- Replace existing rough floors with new concrete slab with insulation on dpm on hardcore bed. As there is plenty of headroom it may be possible to simply cover the existing with suitable insulation and finishes (depends on architectural details).

Signed for
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14 OCT 2010