Address:

Job Number: AC4006
Date: 14th February 2017

Structural Inspection
of
Barn Structure

at **Oak Farm,**
Bagnall Road,
Bagnall,
Stoke on Trent,
Staffs

Client: **Kerrie Middleton,**
William Cottage,
Lark Hall Farm,
Luzlow Lane,
Bagnall,
Staffs,
ST9 9JZ

Rachel Timmis
53 Light Oaks Avenue
Light Oaks,
Staffordshire
ST2 7NF.

Aspin Consulting Ltd.
Suite F13
Genesis Centre
North Staffs Business Park
Innovation Way
Stoke on Trent
ST6 4BF

Tel: 01782 366100
Fax: 01782 366104
Email: info@aspingroup.com

Address:

Job Number: AC4006
Date: 14th February 2017

Contents:

1.0 INTRODUCTION

2.0 GENERAL DESCRIPTION

3.0 FRONT ELEVATION (NORTH EAST)

4.0 GABLE (SOUTH EAST)

5.0 REAR ELEVATION (SOUTH WEST)

6.0 GABLE (NORTH WEST)

7.0 CONCLUSIONS AND RECOMMENDATIONS

1.0 INTRODUCTION

1.1 Aspin Consulting were instructed by Forefront Development Consulting to carry out a structural inspection of the stone built barn structure at Oak Farm, located off Bagnall Road, Bagnall, Stoke on Trent. Our Engineer visited the site on Thursday 9th February 2017 to carry out this inspection.

1.2 The inspection comprised a general, visual examination of the exposed accessible services and areas of the property, we have not examined the woodwork, foundations, various surfaces and other parts of the building structure and fabric concealed at the time of inspection and we are, therefore, unable to comment on the condition of such areas. We have not consulted with the Local Authority or other statutory bodies.

2.0 GENERAL DESCRIPTION

2.1 The barn unit is a detached building constructed of approximately 450mm thick stone walls under a pitched roof which has since collapsed into the building. The roof finishes have been removed from site which we understand were stolen. The barn is set back from Bagnall Road opposite School Road and is accessed via a public footpath across an open field.

2.2 The barn structure has a rectangular footprint. From our limited inspection it is not clear if the barn had a first floor mezzanine as the roof structure has collapsed into the building. The original roof structure appeared to be duo pitched, with roof finishes supported off a system of timber rafters on timber purlins which span between several king post type trusses and the external walls of the barn.

2.3 The site was considered too dangerous to access internal areas of the barn, all observations were made externally from behind the Heras fencing which runs around the full perimeter.

2.4 The topography local to the plot is generally flat with site levels beyond falling towards the east. The building is set to soft landscaping.

3.0 FRONT ELEVATION (NORTH EAST)

3.1 This elevation has a single access door located centrally which has since been blocked up. Above the opening a large stone lintel provides support. A larger opening is noted to the left of the former doorway. The support over has collapsed following the roof caving in.

3.2 The barn structure appears to have been constructed of a cut facing stone, internal stone leaf with a rubble infill of a total thickness of approximately 450mm.

3.3 The stone cladding has partially collapsed along the eaves line and locally around the truss support locations.

3.4 There are six small slot openings noted within this elevation at approximately 700-900mm above ground level.

3.5 The ground immediately in front of this elevation is covered in stone debris following its partial collapse.

3.6 A stone plinth is noted at low level, two courses above ground level, which indicates signs of damp and moss growth.

3.7 There are two vertical fractures noted to the far right hand side of this elevation, this damage appears to be of a historic nature.

3.8 The stonework to this elevation is in reasonable order, however, there appears to be a general lean away from the building from mid-height. Bulging is also noted locally around the truss bearing positions.

3.9 The collapsed roof structure suggests its construction was formed from four king post trusses supporting a system of timber purlins and rafters.

3.10 There are no rainwater goods along this elevation.

4.0 GABLE (SOUTH EAST)

4.1 This elevation has a single window opening located centrally at high level. There are three low level slot openings noted, which appear to have been infilled behind with blockwork.

4.2 A brickwork planter is located directly alongside this elevation. Three trees have grown directly adjacent to the stonework, these have grown above the ridgeline and require removal to prevent further potential ongoing maintenance issues.

4.3 The stonework generally appears relatively straight and plumb. However, some slight undulation is noted along its length. There are many open and weathered joints noted throughout this elevation

.

4.4 A feature stone verge is noted running along the top of the gable elevations.

5.0 REAR ELEVATION (SOUTH WEST)

5.1 A significant portion of this elevation has partially collapsed mainly associated directly below eaves and to the left hand side to mid height of the masonry panel.

5.2 A single former door opening is noted centrally within this elevation which has a large stonework lintel over. Five small slot openings are noted along ground floor level with several former infilled slot openings at higher level to the left hand side.

5.3 The masonry panel appears to be leaning outwards slightly which becomes more pronounced towards the centre of the elevation directly adjacent to the section of stonework that has collapsed towards the left hand side.

6.0 GABLE (NORTH WEST)

6.1 This elevation has a single high level window opening located centrally with a cut stone lintel over. Three low level slot openings are noted in addition to three further former slot openings above which have since been infilled.

6.2 A section of the stone cladding to the right hand side at eaves level and along the verge has collapsed.

6.3 Sone minor undulation is noted along the length of this panel, with a more pronounced bulging seen centrally below the window opening location.

6.4 The condition of the stonework itself appears generally to be in reasonable condition. However, there are many open and weathered mortar joints noted throughout.

7.0 CONCLUSIONS / RECOMMENDATIONS

7.1 From the observations made it would appear that no ongoing settlement or subsidence was noted to the building.

7.2 In general the damage noted was confined to the superstructure and was caused by a variety of reasons. The most obvious damage being that the roof structures have collapsed into the building and as a result has brought down sections of the rear elevation and localised areas of stonework around the truss bearing locations.

7.3 Furthermore minor damage noted to the structure can be attributed to weathering, mechanical damage, thermal and differential movement coupled with the various alterations that have been made to the building. We understand that the building is to be converted to form a domestic residence.

7.4 We would, however, recommend that a formalised regime of repairs is drawn up which encompasses such items as the following.

7.5 Formation of new ground bearing concrete slabs. Care should be taken when carrying out this operation not to undermine any existing walls which may require underpinning should the proposed formation level be lower than the existing foundation level. We would advise that a trial hole is carried out to each elevation to establish the depth of the existing foundations to give an early indication of any potential works that may be required.

7.6 Introduction of damp proof course.

7.7 The formation of new insulated internal wall coverings.

7.8 With regard to the roof structure, we would suggest that the purlins and rafters are not likely to be salvageable, however, consideration may be given to the reuse of the king post trusses should these be found to have not been compromised by the roof collapse. An inspection should be undertaken by a specialist to establish whether any damage has been caused as a result of the collapse and/or due to insect infestation/or damp and any recommendations being undertaken accordingly. Roof coverings are to be renewed.

7.9 Formalisations of lintels above all apertures. Removal of timber lintels and other timber elements within wall structure where applicable.

7.10 External stonework requires rebuilding where collapsed along the front and rear elevations. Significant areas of the masonry require repointing particularly to the gables with some localised areas of weathering/spalled stone having to be replaced.

7.11 The introduction of new rainwater goods and formalisations of drainage on sight.

7.12 Notwithstanding the points above, the building is of substantial construction. Aspin Consulting are satisfied that the structure is significantly robust and entirely suitable for conversion with only moderate amounts of work required.

Prepared by:

TIM WRIGHT BEng.(Hons) IEng AMIStructE

Associate

……

For and on behalf of Aspin Consulting

Standard Scope and Limitations

This report has been prepared to provide guidance on the structural condition of the property.

We have only inspected and reported upon the defects within the property, as instructed by the client.

The report is based upon a visual inspection of those areas of the property that were readily accessible at the time of the inspection. It is not normal practice to remove internal finishes, lift carpets or move furniture etc. As such, comments cannot be made on those parts of the structure that were inaccessible or hidden from view at the time of the inspection.

We have limited our report to the most important aspects as stated in the text. The report does not provide a checklist of all repairs and improvements that might be desirable.

Our inspection did not include:-

1. The excavations of any trial holes to establish the depth of foundations and bearing strata.

2. Inspection of non-structural items such as doors, door frames, windows, floor, wall and ceiling finishes, other than where they are relevant to structural movement.

3. We have not inspected any services such as electric, gas, water and drainage.

4. We have not inspected those parts of the structure, which were covered, unexposed or inaccessible and we are therefore unable to report that such parts of the property are free from defect.

This report is for the private and confidential use of the client for whom it is prepared.