

STRUCTURAL CONDITION SURVEY

**PROPOSED ALTERATIONS AT SHEPHERDS COTTAGE,
CALTON MOOR**

**REF: 1146
January 2013**

The **Institution**
of **Structural**
Engineers

CONTENTS	Page
1.0 INTRODUCTION	3
2.0 DESCRIPTION OF BUILDINGS	4
3.0 FINDINGS OF SURVEY	5
4.0 CONCLUSIONS & RECOMMENDATIONS	7

1.0 Introduction

Mr N Weaver of Endon SSAS requested that a structural condition survey was carried out on the property. The structural survey was carried out on Wednesday 5 December 2012.

The survey and report were to consider the following:

- The overall structural condition of the property.

Premises surveyed: SHEPHERDS COTTAGE
CALTON MOOR
NR LEEK
STAFFORDSHIRE

Client: Mr N Weaver
Endon SSAS
Smith House
Park Lane
Endon
Stoke on Trent
Staffordshire
ST9 9JA

- 1.1 The inspection was of a limited nature and comprised a walk around the exterior of the building and the interior where access was safe.
- 1.2 It should be emphasised that a detailed inspection was not undertaken. No exploratory investigation was carried out and there was no removal of any fixtures or fittings.
- 1.3 It is not intended to comment upon elements such as window frames, external and internal timberwork, rainwater and drainage goods, fixtures and fittings, or any building services. Timber and damp aspects are beyond the scope of the Brief and the expertise of John Jordan Consulting, but have been considered in very general terms as part of the overall assessment.
- 1.4 Given the nature of the inspection, it is considered likely that defects may exist in areas of the building which were not examined or which were concealed.
- 1.5 These notes have been prepared for the private and confidential use of the Client and their professional advisers, in accordance with the agreed Brief. The Report must not be reproduced in whole or in part, or relied upon by any other party for any purpose without the express written authority of John Jordan Consulting.

In particular, they should not be considered as an appraisal for purchase or investment purposes.

2.0 Description of Building

- 2.1 The building under consideration is an unoccupied barn. The building is a two storey, traditional duo-pitched roofed, solid natural stone walled structure, rectangular on plan. The building's front elevation faces south. There is a small single storey section attached to the northern, rear, elevation, near its western end. This too has a traditional duo-pitch roof over. There is also a, mostly collapsed, series of three walls attached to the eastern gable. There was no roof to this section, but may have been only single storey. The walls were approximately 500 - 600mm thick.
- 2.2 The main building appears as if it may have been built in two phases as there is a visible full height vertical line in the front and rear elevations where there is no lateral interlocking of the external stonework. The masonry to each of the sections of the building either side of the lines appear to be the same both in material, form, quality and general condition. There is a central internal full height and full width wall in line with these lines in the masonry. There is a partial first floor remaining in the eastern section and only a central full span timber beam remaining from a possible first floor in the western section.
- 2.3 The roof to the main building is of traditional timber construction with mid-pitch purlins, ridge board and common rafters and no ceiling, all covered with clay tiles. All the timbers, battens sarking and slates to this roof had been replaced relatively recently.
- 2.4 The roof to the single storey section is of traditional timber construction with ridge purlin and common rafters and no ceiling, all covered with clay tiles. This roof had not been replaced at the same time as the main roof, and may well be formed from the original timbers.
- 2.5 The first floor construction to the eastern section is of rough cut timber beam, common joist and board construction, which may be original, overlaid with some form of mineral screed, which had by no means been laid recently.
- 2.6 There was no ground floor construction evident in any of the sections of the building, all was bear earth.
- 2.7 The south, front, elevation consists of two single ground floor doorways and two high level window openings protruding above the eaves level into extensions of the walling up into individual duo-pitched dormer roof sections, projecting up from the main roof pitch. These openings all have external natural stone and internal timber lintels. There were no doors or windows in place.
- 2.8 The western gable elevation of the building consists of one low level and one high level window opening with external natural stone and internal timber lintels. There were no windows in place.
- 2.9 The north, rear, elevation consists of masonry alone, with no doors or windows. However, there is a small window opening in the northern gable of the single storey section attached to this elevation. There was a window frame in place but no glazing.
- 2.10 The eastern gable elevation consists of masonry alone, with no doors or windows. The internal face of the central section of this wall had been rebuilt with blockwork from first floor level upwards, relatively recently, possibly at the same time as the main roof was replaced.

3.0 Findings of Survey

- 3.1 The following general observations were made during the course of the visual inspection of the building. These observations are only indicative and they are not intended as a detailed schedule of condition.
- 3.2 There did not appear to be any obvious evidence of substantial subsidence, or any other form of substantial vertical movement within the walls of the building.
- 3.3 There did not appear to be any obvious evidence of substantial bulging or leaning within the walls to the building.
- 3.4 There were generally signs of damp to the surface of the masonry at the base of the walls throughout the building.
- 3.5 The timber lintels were generally in a poor to very poor condition with areas of rot and infestation, with some showing sagging causing the masonry above to have moved. In some cases this did appear to present an immediate danger, and in some locations lintels had collapsed completely. It should be considered an important safety matter to ensure that the masonry is stabilised and not left to deteriorate to a point where sections of the masonry collapse completely.
- 3.6 The stone lintels were generally in a fair to poor condition. However, there was a full height crack within the mid-span of the low level lintel to the western gable elevation and slipping and dropping had begun to occur in the masonry above.
- 3.7 The lines of the roof did not show any adverse warping, sagging, dropping or spreading. The roof timber structure appeared to be in a fair condition with some visible signs of damp where tiles were missing. The clay tile covering appeared to be generally in a fair condition. However, there were some isolated areas where some tiles were missing.
- 3.8 There did not appear to be a DPC to any of the walls.
- 3.9 The condition of the masonry to the barn ranged from fair through poor to very poor. Generally the surface was too poor or irregular to have made any cracks visible. At worst there were patches of loose masonry to the south and east elevations. Mortar joints and pointing were loose and missing in areas over the whole extent of the building.
- 3.10 There were a number of horizontal timbers visible within the internal face of the external walls and within the faces of the internal cross wall. These were in a variety of different levels of condition, some having rotted and being very soft.
- 3.11 The ridge beam and common rafters to the low level duo-pitch section showed evidence of rot and woodworm infestation throughout.
- 3.12 The first floor timber boards, joists and support beam all showed evidence of severe woodworm infestation and the timber was very weak and crumbly in places. The support beam had a shear failure at one end and had been subsequently propped beyond the failure point with a vertical timber supported off the earth floor. There were also sections of the floor missing.

- 3.13 There was no roof to the lean-to section and the walls were in some considerable stage of collapse. There was also substantial vegetation growth within the remaining sections of the walls.
- 3.14 There was also tree growth immediately adjacent to the base of the walls of the building. There were no obvious signs of these having caused any movement within the walls or foundations at this stage.

4.0 Conclusions and Recommendations

- 4.1 On the basis of a visual inspection, it is intended to comment upon the general structural condition, in accordance with the terms of the Brief and the limitations of the inspection.
- 4.2 The building appeared to be in a fair to poor condition and did not appear to be outside of the potential for redevelopment.
- 4.3 There were areas of damp to the walls due to a lack of proper connection to downpipes. The downpipes should be replaced / repaired as necessary.
- 4.4 There were also areas of damp near the base of the walls. These may well be due to rising damp from the ground. A more detailed investigation should assess the presence of a DPC, and if there is or is not, what measures, if any, should be taken to address any damp from the ground.
- 4.5 The timber lintels should be replaced with steel or precast concrete alternatives. In some cases the condition of the timber lintels appeared to present an immediate danger. It should be considered an important safety matter to ensure that the masonry above these lintels is stabilised and not left to deteriorate to a point where sections of the masonry collapse completely.
- 4.6 The low level stone lintel to the western gable elevation should be replaced and the slipped and dropped masonry above should also be rebuilt.
- 4.7 The visible signs of damp in the roof timbers where tiles were missing should be investigated further to check for rot and damage and replaced as required. The roof tiles should be replaced in the isolated areas where some were missing.
- 4.8 The patches of loose masonry to the south and east elevations should be rebuilt. Areas of loose and missing mortar joints and pointing in areas over the whole extent of the building should be repaired and replaced as necessary.
- 4.9 The horizontal timbers within the internal face of the external walls and within the faces of the internal cross wall should be replaced with masonry as their degradation will induce instability and damp within the walls.
- 4.10 The ridge beam and common rafters to the low level duo-pitch section should be replaced with sound roof tiles relayed or replaced as required.
- 4.11 The first floor timber floor should be removed and replaced in its entirety with a new floor.
- 4.12 The partially collapsed walls to the lean-to section should be either rebuilt complete with a roof or coping or the walls should be removed completely and the remaining building wall made good to ensure that damp is not encouraged to progress from the partially collapsed walls into the building.
- 4.13 The tree and substantial vegetation growth immediately adjacent and local to the walls should be removed to prevent against the potential for movement within the walls and foundations. Care should be taken in this respect due to the size and proximity of the vegetation as their removal itself may cause movement and instability. Some degree of underpinning or replacement of the walls or foundations may be required.

4.14 Timber and damp aspects are beyond the scope of the Brief, but there was potential for timber decay, mould, fungal growth and infestation as not all timbers were open to view. The presence, extent and details of any asbestos items is not covered by this report and should be assessed by a specialist, also with regards to the management of these items at all stages of the proposed scheme.

4.15 In order to address the structural issues towards redevelopment, it is considered that some structural works may be required. Such works may include the following items.

This is not intended to be an exhaustive list, or a detailed schedule of work. It is only indicative of the basic main items, which may be required.

- Repair / replacement of damaged rainwater goods.
- Introduction of a DPC or any other damp-proofing works as deemed necessary dependent upon a more detailed investigation and the details of the proposed refurbishment.
- Replacement of timber lintels with steel or precast concrete alternatives and rebuilding of masonry above, as required.
- Replacement of low level stone lintel that had split.
- Replacement of main roof timbers if degraded.
- Replacement of roof tiles as required.
- Repair / replacement of loose masonry.
- Repair / replacement of missing or poor mortar joints and pointing.
- Removal of horizontal timbers in the walls with masonry.
- Replacement of roof timbers to low level duo-pitch roof.
- Replacement of the 1st floor in its entirety.
- Rebuilding or complete removal of the walls to the lean-to section.
- Removal of trees and vegetation adjacent to and local to the walls.
- Treatment of timber decay, dry rot, etc as determined by specialist.
- Any works required to manage the presence of any asbestos as determined by specialist.

4.16 There has been no assessment upon the adequacy of any items to support loads or assessment of the suitability of the foundations.

4.17 It should be emphasised that the above has been based on a brief visual inspection and in order to more accurately identify the condition and assess any remedial work requirements, it would be necessary to carry out a very detailed survey.

4.18 It is also strongly recommended that separate advice be obtained from appropriate specialists in relation to timber and damp aspects, building services, asbestos etc.