

01 October 2020

Mrs K Wilkinson
The Star Inn
Harbottle
Morpeth
Northumberland
NE65 7DG

REPORT ON STRUCTURAL INSPECTION OF STORES & GARAGES AT THE STAR INN

1.0 INTRODUCTION

In accordance with instructions received a structural inspection of the stores and garages at The Star Inn, Harbottle was carried out on 03 September 2020. The buildings were constructed late 19th Century and consist of a two-storey former stable and a range of single storey garages / stores. The buildings are of traditional sandstone construction with pitched slated roofs.

2.0 SCOPE OF INSPECTION

The purpose of the inspection was to examine and report on the structural integrity of the principal load-bearing elements of the building with regard to a proposed conversion scheme to create residential and commercial units.

The scope of inspection did not include:

- 1) Any examination of the timber in the property exposed or inaccessible for insect or fungal attack.
- 2.) Any inspection of structural elements that are covered, unexposed or otherwise inaccessible (for example: foundations, floor construction etc.) and we are thus unable to report that any such element is currently free from defect.

- 3.) Any detailed inspection of superficial wall, ceiling or floor coverings for minor defects, (including plaster) which can be regarded as cosmetic and non-structural.
- 4.) Any testing of mains services, i.e. gas, electricity, water, foul and storm drainage or external rainwater goods.
- 5.) Any detailed inspection of the roof covering (i.e. slates, tiles, etc.) by opening-up or similar other than is apparent during an external inspection without the benefit of close access via scaffolding or similar.

If additional inspection and testing of the above items are required, this can be arranged on your behalf for which specific additional instructions should be issued.

3.0 REPORT ON CONDITION OF STRUCTURE

3.1 EXTERNAL ELEVATIONS

3.1.1 The main load-bearing walls are 450 / 500mm thick (nominal) solid sandstone masonry with rubble infill. The external leafs are random rubble walling pointed with lime / sand mortar. The internal leafs are also generally pointed with lime / sand mortar and some are partly harled with lime render.

3.1.2 The walls are generally sound for the age of the property with no evidence of any significant current differential settlement or similar structural distress.

3.1.3 Occasional very slight cracking is evident to some walls due to minor historical differential settlement which will be made good by selective rebuilding, re-pointing and re-bonding as necessary. Selective crack repairs will be required however under-pinning is not considered to be necessary.

3.1.4 The buildings do not benefit from any solid underground drainage in some locations and surface water from roofs etc. discharges directly into the ground adjacent to the footings of the external walls. This is likely to have caused very minor settlement of the walls

and some internal damp issues. A piped surface water drainage system is required to prevent further settlement and to reduce the potential for internal dampness.

3.1.5 Some small areas of stonework to the external leafs are loose, particularly at gable peaks / verges and the mortar joints are open. Loose sections of stonework can be rebuilt and verges stabilised / pointed during the proposed conversion works.

3.1.6 Generally, the external sandstone is in good condition. It is greyish in colour in places which is an indication that it is more hard-wearing than lighter coloured sandstones. A few isolated stones have eroded due to weathering over the years which can be carefully cut out and replaced or indented during the conversion works.

3.1.7 Externally the lime mortar pointing is generally in fair condition but has weathered back in places behind the faces of the stones. Re-pointing in natural hydraulic lime is advised which will provide protection to penetrating water and allow the fabric of the building to 'breathe' as originally intended.

3.1.8 Support over window and personnel door openings consists of natural sandstone lintels to the outer leaf and timber lintels behind supporting the inner stone leaf and rubble fill. The sandstone lintels are generally in good condition and no cracks or similar defects were noted. Minor woodworm was noted in some timber lintels, which may be historic however precautionary treatment with pesticide is advised.

3.1.9 The north wall of the two-storey store building retains the ground behind to an approximate height of 4.00m above courtyard level. The wall appears structurally sound and in fair / good condition for its age, element of support and exposure to ground water. The internal face of the wall appears damp and is sporadically covered with algae however no running water was identified. The wall will require the application of an internally applied cavity drainage membrane linked to the waterproof membrane in the new ground floor slabs.

3.2 ROOF CONSTRUCTION

3.2.1 The roof coverings to the buildings consist of natural Welsh slates fixed to timber battens. The back of the slated coverings has been pointed (torched) with lime mortar to provide additional protection against the elements, most of which has now detached. The roofs will require a degree of refurbishment and repair to include re-slating works (re-using a proportion of the existing slates) and the installation of vapour permeable under-slating membranes.

3.2.2 The single-storey roof consists of a traditional timber structure consisting of common rafters supported on traditional lower and upper purlins. Purlins are further supported on King Post trusses. The roof structure is in fair condition and has benefited from an open aspect allowing plenty of ventilation to the timbers. There is evidence of very minor woodworm infestation and a degree of wet rot can be anticipated particularly in the ends of rafters. Preservative treatment of the existing structure is advised with selective timber repairs / replacements where required.

3.2.3 The two-storey roof consists of a traditional timber structure consisting of common rafters supported on traditional lower and upper purlins. Purlins are further supported on 'A' frame trusses with two raised collar ties. The roof structure is in fair condition and has benefited from an open aspect allowing plenty of ventilation to the timbers. There is evidence of very minor woodworm infestation and a degree of wet rot can be anticipated particularly in the ends of rafters. Preservative treatment of the existing structure is advised with selective timber repairs / replacements where required.

3.2.4 The north roof slope of the two-storey building is covered with asbestos roof sheeting. This material should be removed under controlled conditions in accordance with HSE guidance documents and disposed of to a licensed waste facility.

3.2.5 Rainwater goods (where fitted) are, generally, plastic and are in fair condition. It is essential as part of the conversion project that gutters are all free from leaks and are fitted to all roofs to prevent water penetration and potential settlement issues as previously noted.

3.3 FLOORS

3.3.1 The ground floors are generally concrete ground bearing slabs. The two-storey building floor is less formal and is a mix of concrete, stone slabs and earth which are only suitable for the current purpose. The installation of new floor slabs will be required for the proposed use.

3.3.2 The first-floor structure in the two-storey building consists of timber T&G boarding on timber joists. Further support is afforded by a central timber beam and posts. The joists span front to back and are built in to external walls. The floor boards are severely decayed in places where exposed to water ingress from previous roof leaks and complete renewal of the floor-boards is advised. The joist ends are damp (and probably decayed) where built in to the rear (north) wall and exposed to ground water. It is advised that the joist ends are cut off from the rear wall and the joists fixed to a new timber bearer or fixed to the wall with galvanised steel joist hangers. Some repairs and renewals of joists can be anticipated.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 The existing load-bearing walls do not exhibit any evidence of any current major or significant differential settlement or similar structural distress.

5.2 Occasional cracking to external walls can be made good by selective rebuilding, re-pointing and re-bonding as necessary. Selective crack repairs will be required however under-pinning is not considered to be necessary.

5.3 A piped surface water drainage system is required to prevent further settlement and to reduce the potential for internal dampness.

5.4 Small areas of loose stonework particularly at gable peaks / verges can be rebuilt and verges stabilised / pointed during the proposed conversion works.

5.5 Isolated eroded stones can be carefully cut out and replaced or indented during the conversion works.

5.6 Re-pointing of external walls in natural hydraulic lime is advised which will provide protection to penetrating water and allow the fabric of the building to 'breathe' as originally intended.

5.7 Precautionary treatment of timber lintels with pesticide is advised.

5.8 The north (retaining) wall will require the application of an internally applied cavity drainage membrane linked to the waterproof membrane in the new ground floor slabs.

5.9 The roofs will require a degree of refurbishment and repair to include re-slating works (re-using a proportion of the existing slates) and the installation of vapour permeable under-slating membranes.

5.10 Preservative treatment of the existing roof structures is advised. Some timber repairs / replacements may also be required.

5.11 The asbestos roof sheet material should be removed under controlled conditions in accordance with HSE guidance documents and disposed of to a licensed waste facility.

5.12 It is essential as part of the conversion project that gutters are all free from leaks and are fitted to all roofs to prevent water penetration and potential settlement issues to main load-bearing walls.

5.13 The installation of new floor slabs will be required for the proposed use which should include damp proof membranes and insulation.

5.14 Complete renewal of the first floor-boards is advised. It is advised that the joist ends are cut off from the rear (north) wall and the joists fixed to a new timber bearer or fixed to the wall with galvanised steel joist hangers. Some repairs and renewals of joists can be anticipated.

5.15 Full internal refurbishment will be carried out and it is recommended that the existing walls are dry-lined with plasterboard on timber studwork or similar. Cavity drainage membranes may be required in some locations, in conjunction with a damp-proof membrane beneath new floors.

5.16 It is concluded that the buildings are in fair condition and structural order and are thus suitable for conversion and refurbishment to form new residential and commercial units.

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PHOTOGRAPHS



P1 – View of two-storey building



P2 – Rear of two-storey building / asbestos roof sheets



P3 – High ground level at rear of two-storey building



P4 – West gable wall / loose verge stones



P5 – West gable wall



P6 – Loose stonework over west gable door opening



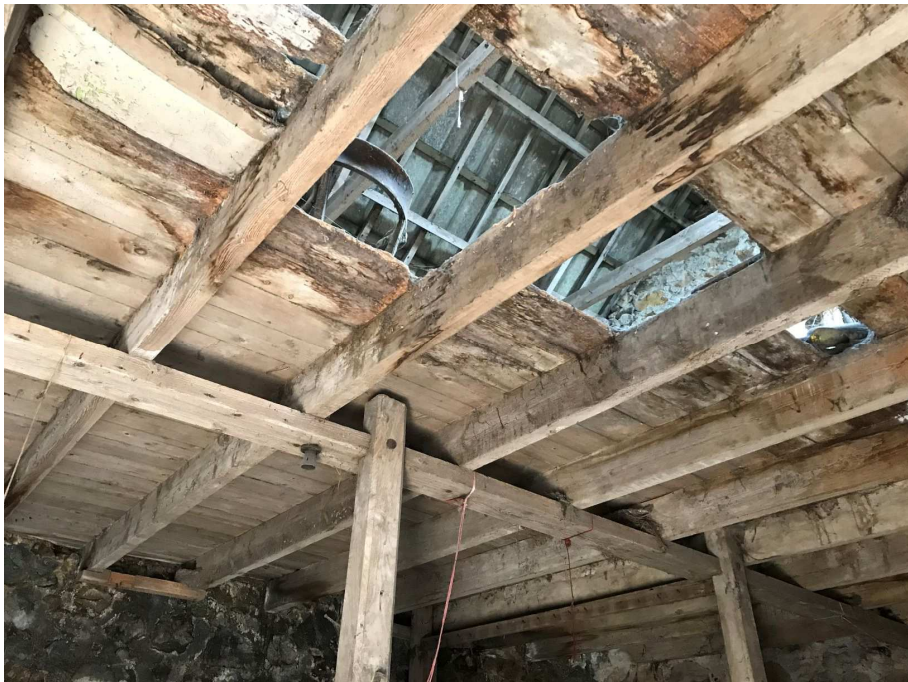
P7 – Eroded stone to west gable door jamb



P8 – Open mortar joints to external walls



P9 – View of single-storey garages / roof coverings



P10 – Section of decayed floor-boards to two-storey building



P11 – Algae growth / dampness to rear (north) retaining wall



P12 – Minor woodworm flight holes to timber door lintels



P13 – View of garage walls / roof structure



P14 – View of garage walls / roof structure