

# Bingham Yates Limited

Consulting Engineers

38 Victoria Place Carlisle Cumbria CA1 1EX



Your ref.

Our ref. D1558/RM/EP

Date 27<sup>th</sup> November 2020

Natalie Barratt Esq  
Moorleys Farmhouse  
Homan  
Egremont  
Cumbria  
CA11 2UA

Dear Ms Barratt

## **REPORT ON VISUAL INSPECTION OF FARMHOUSE AND BARNHOUSE STRUCTURE, MOORLEYS FARMHOUSE, HOWMAN, EGREMONT**

We confirm our visit to carry out a visual inspection of the above property on 18 November 2020, and we are pleased to report as follows.

The extent of the survey was limited, to a degree, by safe access not being possible to some areas, and up to higher level, and is primarily intended, in good faith, as being a general initial appraisal of the condition of the structural fabric, without the benefit of any opening up work/investigation.

### **OBSERVATIONS**

We enclose for clarity, in order to possibly assist you in the appreciation of our observations and report, a copy of our site photographs reference D1588 / P1 to P93. For location of room numbers referenced within this report, please refer to Bingham Yates Limited drawing numbers D1588 / Sk.01 and Sk.02.

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The property is a stonework farmhouse with an attached stonework barn. The farmhouse has undergone partial redevelopment, with a new first floor and new roof structure in place. The wall construction appears to be of stone rubble core walling. The property is likely to have indistinct foundations, probably founded on organic material at shallow depth.

### **INTERNAL.**

Within Room 1 (reference photographs P1 to P4) there is a new first floor structure comprising of timber floor joists on timber bearers anchored to the existing stone walls. There are new robust concrete lintels to the external window and door openings. There is a new 440mm wide blockwork wall between Rooms 1 and 2, which appears to continue up to roof level. The ground floor construction appears to comprise a new concrete slab over a DPM, and this floor appears to be similar to Rooms 2, 3 and 4. There was no access to the underside of the slab, and therefore we cannot confirm the presence of insulation below the slab.

There is a proprietary waterproof drainage membrane system attached to the external walls. There does not appear to be a channel at the base of the system to remove any moisture ingress.

To Room 2 (reference photographs P5 and P6) there is a new first floor structure comprising of timber floor joists on timber bearers anchored to the existing stone walls. This first floor comprises the staircase void. The ground floor construction appears to comprise a new concrete slab over a DPM, similar to Room 1. There is a new 100mm thick blockwork wall between Rooms 2 and 4, and this appears to continue up to roof level.

Room 3 is a single storey appendage to the rear elevation (reference photographs P7 to P10). There are two aged timber purlins supporting relatively new timber rafters forming the mono-pitch roof structure. We can not dismiss the possibility of rot damage to the original purlins.

There is a similar proprietary waterproofing drainage membrane fixed to all walls within Room 3. There was moisture ingress evident at the time of our visit, however, it is our understanding that the exterior of Room 3 had recently been pressure washed.

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To Room 4 (reference photographs P11 to P19) there is a recent first floor construction over comprising timber floor joists supported on timber bearers secured to the existing external front and rear walls. There is questionable support to approximately 2700mm of first floor construction adjacent to Room 2. The floor joists appear to be supported off a single timber trimmer parallel to the front and rear walls, which in turn is supported off a single floor joist, which is supported from the end section of timber bearer cantilevering from a single anchor into the existing walls.

There are existing timber lintels to the large opening within the front external elevation, which appear in a reasonable condition, however, we cannot dismiss the possibility that there is some degree of rot damage.

The ground floor construction appears to comprise a new concrete slab over a DPM, similar to Room 1. The waterproofing drainage membrane is present to the external walls within Room 4, similar to the other Rooms.

Room 5 is part of the un-developed barn building (reference photographs P20 to P33). The roof construction comprises two original aged timber trusses supporting aged timber purlins, which in turn support slender timber rafters. There is evidence of widespread rot and woodworm damage to the timbers. To the left hand truss (as viewed from the front), there appears to be a makeshift timber prop to the truss bearing on the external front wall.

Below the left hand truss there is an aged steel tie bar between patten plates on the front and rear elevations.

The ground floor appears to be the original bare earth floor.

There is an excessive outward deformation to the front elevation wall either side of the double height opening, which is more pronounced to the left hand side of the opening. There is also an inward deformation to the rear elevation wall.

The higher level opening into Room 6 has two aged and delapidated timber lintels forming the opening. There appears to be evidence of rot damage to the two timbers. The reveal adjacent to the front elevation appears in a poor condition and has some degree of outward deformation, similar to the front elevation wall.

The opening between Room 4 and Room 5 appears to have been historically rebuilt using unsympathetic concrete blockwork.

Room 6 has aged timber purlins supporting slender timber rafters (reference photographs P34 to P41). There are aged slender first floor joists present with no board coverings. The ground floor construction appears to be a concrete slab, however, there is no apparent evidence of a DPM or insulation below.

There is an open joint / crack to the rear external corner. The external gable wall has a slight outward deformation to the upper section. The internal wall between Rooms 5 and 6 appears relatively plumb. There is a crack to the wall section below the higher level opening towards the external door.

Room 7 above Room 1 (reference photographs P42 and P43) has new timber raised tie roof trusses creating the new roof structure. There are plastered walls to the gable end and front elevations. There is chipboard flooring to the first floor.

To Room 8 above Room 2 (reference photographs P44 to P46) there is a new timber raised tie truss rafter roof present. There is chipboard flooring to the first floor.

To Room 9 above Room 4 (reference photographs P47 to P51) there is a similar timber raised tie truss rafter roof present similar to Rooms 7 and 8, and also chipboard flooring to the first floor.

To the rear elevation window opening there is no lintel below the timber wall plate supporting the roof trusses. There is a historic embedded timber lintel to the stone wall between Rooms 9 and 5.

To Room 10 (reference photographs P52 to P54) which is located on the ground floor and is accessed from an external door to the front elevation. There appears to be relatively new roof coverings overlaid on the original purlins and slender rafters. There is evidence of rot damage to some of the rafter ends and also the purlins, especially the intermediate purlin to the front slope. There is no tanking membrane to the wall as apparent in Rooms 1 to 4.

### **EXTERNAL.**

The Front Elevation (reference photographs P55 to P65) to the partially developed farmhouse has a rendered finish, which appears in a reasonable condition. The windows and doors have painted stone surrounds.

The front elevation wall to Room 4 and the un-developed Barn is sandstone with lime mortar. There is wideranging loose or missing mortar and wideranging lichen growth. There is also evidence of weathering damage to the sandstone, especially above the opening into Room 4.

The timber lintels to the double height opening appears to have rot damage to the right hand end bearing.

There is a steel pattress plate to the position of the internal tie bar to the left hand side of the double height opening.

The walls either side of the double height opening have an excessive outward deformation which corresponds to the deformation observed internally.

To the Left Hand Side Gable (as viewed from the front) (reference photographs P74 to P80) there is a slight outward lean to the upper section of the wall. The external ground level rises towards the rear of the property, and is likely to be higher than the internal ground level.

There is an open joint / crack towards the rear corner, which corresponds with the internal open joint. There is wideranging loose or missing mortar, and also evidence of weathering damage. There is also wideranging lichen growth to the elevation.

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To the Rear Elevation (reference photographs P81 to P91) it is apparent that the external ground levels have been reduced, however, it is likely that the external ground is still higher than the internal ground floor level.

There is wideranging loose or missing mortar, and also evidence of weathering damage to the stonework. There is also wideranging lichen and algae growth to the Rear Elevation.

Part of the Rear Elevation at the partially redeveloped farmhouse has a render scratch coat finish applied.

The single storey rear appendage forming Room 3 has a render finish to approximately 1200mm above ground level, with facing stone above. The new roof finishes appear straight and true to the appendage.

The Right Hand Side Gable (as viewed from the front) (reference photographs P66 to P69, P71 and P72, and P92 and P93) has a wet dash render finish and appears in a reasonable condition. There is a section of render missing to the rear bottom corner of the gable.

The single storey duo pitch appendage to the gable end appears to have wideranging loose and missing mortar. The new roof covering appears to be straight and true.

There is a small semi derelict appendage to the end of the single storey appendage. There are no roof coverings and the stonework to the walls appears in a reasonable condition, albeit with some loose and missing mortar.

## **CONCLUSIONS AND RECOMMENDATIONS**

We can conclude from the above that considering its age, the property appears to be in a reasonable condition, with no obvious major superficial structural defects (except from the Front Elevation wall at Room 5), however, we suggest that the following further investigations/remedial works are carried out.

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Generally, to the exterior of the property, we would recommend that any areas of aged and loose mortar are raked out to a depth of at least 50mm and repointed in suitable durable lime mortar. We also recommend that any areas of loose stonework are re-built using good quality salvaged stone and bedded in similar mortar.

We recommend that a general assessment of rafter ends, purlin ends, truss bearings, wall plates, etc. is carried out for the presence of rot damage by a timber specialist company, such as Ian Gibson Associates Ltd of Carlisle. There does not visually appear to be any rot damage (except for the areas previously identified within this report), however, due to the age of the property this cannot be dismissed.

We recommend that all remaining timber lintels are removed and replaced with more durable precast concrete lintels. We also recommend that the embedded original timber lintel to the wall between Room 9 and 5 is replaced with stonework to match the existing.

With regard to the ground floor construction within the undeveloped area of the barn, we suggest that once the required levels have been determined that trial excavations are carried out to various locations to determine if any underpinning works will be required to the base of the existing walls. We can provide typical details once the extent of the required underpinning has been determined.

We question the effectiveness of the proprietary waterproofing / sheet drainage membrane, due to the apparent lack of channel at the base of the wall to divert any moisture ingress. We would recommend that this is removed and replaced with a more suitable system, designed by a Specialist.

Due to external ground levels being higher than internal level towards the Left Hand Gable and the Rear Elevation of the property, we would recommend that a land drain is positioned behind the external wall, ideally just below ground floor level, to prevent water build up behind the walls.

With regard to the outward lean to the front elevation wall to Room 5, we confirm that we cannot dismiss the possibility of future instability of this wall, and therefore, we recommend that you budget for re-building approximately 30m<sup>2</sup> of this wall using suitably robust salvaged stonework off a new concrete foundation. This would also enable a straight gutter to be used at the wall head / eaves.

To the window opening to the rear of Room 9, we recommend that a new robust concrete lintel is installed to support the timber wall plate.

We recommend that to the open joint to the rear corner of Room 6 and external to the gable end wall, some remedial works are carried out in the form of either, re-bonding of the stonework, gravity grouting of the rubble core, or a combination of both.

We can also confirm that, as part of the redevelopment works, we can carry out a design check on the installed timber first floor structure and provide any new details required to the Barn area.

We trust this to be of initial assistance, but should you require any further information, please do not hesitate to contact us.

Yours faithfully

A solid black rectangular box used to redact the signature of R. J. Mace.

R. J. MACE

for

BINGHAM YATES LIMITED