



**HBL ASSOCIATES
STRUCTURAL REPORT**

For

**Cow Byre
Moorside Farm
Cauldon Lowe**

On Behalf Of:

Dave R Cooper

HBL Ref: 21/9183

A decorative graphic in the bottom right corner consisting of several overlapping, parallel lines in black and teal, forming a stylized, angular shape.

Document Control

Document reference: 9183-HBL-XX-XX-RP-S-0001

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Rev	Date	Details	Prepared By	Reviewed By
01	July 2020	Information	CAD	GH

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1. Introduction

- 1.1. We were requested by the client, Dave Cooper, to review the condition of the Cow Byre on his farm as part of a planning application to convert the building into a small office/ warehouse/ workshop.
- 1.2. Staffordshire Moorlands District Council has asked that a structural survey of the be carried out to ensure the building is suitable for conversion
- 1.3. The report will cover the current condition of the building identifying any existing structural issues and also consider the potential for conversion, from cow shed to office/workshop.
- 1.4. We attended the property on 18th June 2021 under overcast but dry weather conditions.

2. Limitations

- 2.1. The comments within the report consider the Cow Byre only, the wider farm buildings have not been considered
- 2.2. This report is based upon a visual structural inspection undertaken both internally and externally on the subject building. No intrusive investigations or opening up works were carried out and we are therefore unable to report on the condition of those structural elements that were hidden, unexposed or inaccessible at the time of our inspection.
- 2.3. Access was available to the lower section of roof to the rear of the property, however there was no way to access the upper roof, so this could not be viewed at the time of the inspection.
- 2.4. This report covers structural elements only and we did not undertake inspection of any other disciplines e.g. Fire Engineering, M&E, Habitat, conservation etc. Appropriate specialists should be appointed for these specialisms if felt necessary.
- 2.5. We will make comment within the report with reference to the potential for the building to accept potential changes , however no design checks have been carried. Recommendations will be based on outline assumptions and full design calculations to asses any changes in layout or loading will need to be carried out before any works should be started.

3. Brief Description

- 3.1. The Cow Byre was part of a larger building with part already having been converted to a residential property. The existing building was an L shape, with the converted residential building running from east to west, and the Cow Byre running North to south, on the western end of the building. The southern elevation of the Cow Byre extend beyond the line of the residential section creating the L shape
- 3.2. The building was of typical construction for a barn of its age, with stone walls and a tiled roof. The roof tiles were a more modern concrete roof tile, and were clearly not original.
- 3.3. The ground to the northern elevation was higher than the internal level, the ground level reduced along the western elevation and the level at the southern elevation was similar to that of the internal floor slab.

4. Observations – External Elevations

- 4.1. There were no obvious signs of movement, cracking or bowing associated with on going settlement in the building. All walls appear vertical and there were no obvious signs of any structural distress in the building.
- 4.2. As noted previously the roof tiles were more modern concrete tiles, and had been added at a later date. There were no visible signs of excessive bowing or sagging in the roof, and the mortar to the eaves and gables all appeared modern and in good condition.



- 4.3. The stone work to the walls was in reasonably good condition for a building of its age. There were obvious signs that the pointing had been maintained over the years, although there were still isolated areas that had weathered.
- 4.4. The building was largely sheltered by the surrounding farm buildings with western elevation being the most exposed. The sheltering meant that the North and west elevations showed very few signs of weathering to the pointing or stone work.



- 4.5. The western and southern elevations as expected due to the prevailing weather being from this direction, and the more exposed nature of the western elevation showed some signs of wear to the stone work and pointing. Even though these elevations had experienced more weathering the level of missing or softened pointing was only minimal especially when considering the age of the building.
- 4.6. As can be seen in the photographs below, the areas of missing, cracked or damaged pointing is limited and this is not considered to be a major structural concern and could easily be remedied with some minor repointing works



5. Observations – Internal

- 5.1. Internally there were no finishes to the walls or roof so the internal structure could be seen.
- 5.2. The stone walls appeared in good condition internally and showed no signs of erosion typically caused by cow urine or dung. There was an area of wall, adjacent the gable window, on the western elevation, that had been previously repaired using block work. It is assumed this area was repaired when the new roof was installed and the repair appeared intact and showed no signs of any further movement.



- 5.3. The internal lintels over the doorways and windows were timber, and these all showed signs of historic wood worm attack, and would all require replacing with suitable concrete lintels.
- 5.4. The roof had a modern membrane layer, that confirmed the assumption that the roof had recently been replaced

- 5.5. The roof timbers were generally in good condition and as noted externally showed very few signs of distress or excess deformations.
- 5.6. The southern section of roof appeared to still have the original trusses and purlins although the rafters had been replaced, the northern section of roof appeared to have had some repairs done to the purlins, with a steel angle being installed to pick up the end of the purlin. (See photograph in section 5.3 above)



- 5.7. There were signs of pin holes in some of the newer rafters as well as the existing timbers that suggest there had been issues with wood worm to the timbers. The top of the bottom chord to the original roof truss showed some signs of softening due to the wood worm, but the depth of this was limited. As long as the wood worm is no longer present or treated the we see no issue with these timbers moving forwards



- 5.8. There was some damage and rot to the lower purlin on the western side of the southern section of the roof, this purling may need to be repaired or replaced.

6. Conclusions and Recommendations

- 6.1. For an agricultural building of its age the building is in excellent condition.
- 6.2. The building shows no signs of any significant structural issues and we see no issue with reutilising the existing structure for the proposed conversion.
- 6.3. To ensure the condition the external walls is maintained a suitable long term maintenance strategy for the pointing should be utilised, and any minor repairs required carried out. As noted above there is clear evidence that the pointing has been well maintained by Mr Cooper over the years so this should be continued.

- 6.4. The timbers need to be checked by a suitable specialist to ensure there is no current or ongoing wood worm infestation, and any treatments required are carried out. All internal timber lintels should be replaced with new concrete lintels.
- 6.5. There are currently no restraint straps or ties between the roof and the gables, we would recommend adding any required ties between the roof and wall in line with the details in BS EN 1995-1-1:2004 and current Building Regulations. This is again a minor repair and would not affect the conversion of the building.