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# VISUAL STRUCTURAL INSPECTION

# OF THE

# STEEL FRAMED BARN BUILDING
# KILNMIRE FIELD
# LADY HALL
# MILLOM

## FOR

## MR PARROTT

**Reference - WDS/05/8706/REP01**

**Date - 28/05/2024**

## 1.0 BRIEF

**1.1** WDS Limited were instructed by Mr Parrott to carry out a structural inspection of the Portal Frame Barn Building, Kilnmire Field, Lady Hall, Millom. The purpose of the inspection was to verify whether the existing barn structure is adequate to convert into a dwelling. The survey was limited to a visual, non disruptive inspection of the buildings where access allowed.

**1.2** The building comprises a steel portal framed single storey structure. The roof is cladded with cement fibre profiled sheeting supported by timber purlins off the main portal element, the elevations are a combination of timber boarding, profiled sheeting and a block wall to the lower extent. The ground floor is partially compacted gravel and a ground bearing concrete slab. There is a steel framed mezzanine floor to the left hand extent of the building.

**1.3** The barn is approximately 50 years old.

**1.4** The inspection was carried out on the 3rd May 2024. On the day of the inspection the weather was dry and clear.

**1.5** It should be noted that there may be faults with the building which are masked or hidden by finishes that are not normally identified during a non disruptive inspection.

**1.6** For the purposes of this report all locations will be referenced as if looking at the front elevation, which is the elevation which faces the highway.

## 2.0 OBSERVATIONS

**2.1** The steel frame has surface rust throughout however this has not compromised the structural integrity of the building. The frame appears structurally suitable and does not show any signs of distress or excessive deflection which could affect its current usage. The proposed conversion works will need to be sympathetic to the existing structure and will not apply any additional loading to the existing frame. The frame could be strengthened, if necessary, as part of any conversion works.

**2.2** The ground floor slab is not required as part of the proposed conversion and will be taken up. No further comment regarding the slab will be made in this report.

**2.3** The block wall to the lower portion of the elevations is generally in an adequate condition and with some water proofing could be retained as part of the conversion works.

**2.4** The internal steel framed mezzanine is not suitable for inclusion in any conversion works and needs removed. It is unlikely that the existing building foundations will support an additional first floor structure.

**2.5** The timber purlins and timber side rails are over spanned and will need replaced/strengthened as part of any conversion scheme.

## 3.0 DISCUSSION/RECOMMENDATIONS

**3.1** The steel portal frame is structurally adequate in its current form and any proposed conversion works will need to convert the building sympathetically to the existing structure. We propose a masonry and timber framed structure is built internally around the frame to allow the frame to be retained whilst relieving loading off the steel frame and thus not compromising the existing barn structure. The steel frame will need cleaned down and painted with a rust inhibiting paint.

## 4.0 CONCLUSION

**4.1** The existing barns steel portal frame will need refurbished to remove all rust prior to carrying out the conversion works. The existing barn structure can be retained as part of the conversion works as the conversion works will have no detrimental structural affect on the existing building structure.

For and on behalf of WDS Limited

Tom Short BEng (Hons) CEng MICE