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12th August 2024

Mr J French
Hill Top Farm
Eastfield Lane, Thurgoland
S35 7AY

Structural Appraisal of Barn Building for a Proposed Conversion to a Residential Dwelling at Hill Top Farm, Thurgoland

Dear Mr French,

Further to your instruction, we were engaged to undertake an appraisal of the barn structure at Hill Top Farm with a view to its conversion into 5 No habitable dwellings.

We inspected the above barn on the 05th August 2024. The inspection was a visual inspection only undertaken from easily accessible floor levels only with no intrusive works undertaken or finishes removed. The weather at the time of the inspection was dry.

This report is a structural appraisal only and not a full condition survey/report, no detailed inspection was undertaken on any individual elements of the structure.

The barn structure was appraised for its conversion to a residential dwelling as outlined on the proposed development drawings '20-24-PL01 to PL04' provided by Hinchliffe Architecture and Design.

Barn Description

The existing barn structure is a detached structure formed by a duopitch steel portal framed structure, the sections of the portal frame appeared to be steel Universal Beam sections throughout.

The barn has profiled cement/asbestos sheeting to the roof over timber purlins with some insulating material in some bays between purlins. The barn elevations have steel profiled sheeting to upper sections of all elevations on timber cladding rails, all elevations of the barn have blockwork to approximately 1.0m from slab level.

The North-West elevation of the barn has predominantly pedestrian access doors at intervals along the length of the barn. The South-East elevation of the barn has multiple pedestrian and vehicular access doors at very regular intervals along the length of the barn.

The ground floor to the barn where visible was seen to be a smooth finished concrete slab.



SOUTH-EAST ELEVATION



NORTH-WEST ELEVATION



INTERNAL SLAB



INTERNAL FRAME VIEW

Inspection Findings

The inspection of the barn structure noted no visible evidence of any major structural issues or movement.

The timber purlins/cladding rails to the sheeting were seen to be in good condition where not covered by materials or underdrawn insulation to the roof.

A laser level or plumb line was not used to check the vertical alignment of the steel frames but visibly the steel frame appeared to be vertically plumb in each direction with no obvious differential movement between adjacent frames. The ridge line of the barn had some very minor undulations in the ridge line, but it was not obvious if this was due to the sheeting, purlin positioning or minor lateral movement of the steel frame.

The steel frame throughout was showing surface rust due to the exposed nature of the frame, there no sections with any visible loss of section.

The blockwork low level masonry to the elevations had some minor hairline cracking in areas but we do not consider this to be of a major structural concern.

The ground floor throughout the barn where visible appeared to be a flat concrete slab with a smooth finish, the slab had multiple signs of cracking away from the formed slab joints. The extent of the cracking could not be reviewed on site and some additional investigation would be needed to confirm the slab and sub base make up along with any existing reinforcement that may or may not be present.

The steel frame structure appeared to be supported on the exposed concrete slab throughout. No inspection was undertaken of the existing structure foundations, however, there are no visible signs of settlement to the steel frame or masonry infill structure so they would appear to be performing satisfactorily.

Conclusion

Our visual inspection of the barn structure has shown that the barn is free from any obvious major structural issues of defect.

In our opinion the current condition of the barn would be deemed of substantial and permanent construction suitable for conversion to a habitable dwelling with some works as mentioned previously.

Inspection Limitations

Our inspection was a visible inspection only from accessible floor levels only, no inspection was undertaken of any woodwork (unless visible as noted in inspection), damp proof courses, membranes or any other elements of the structure that would be unexposed/inaccessible due to their location or the contents of the barn. We are unable to comment on any of these elements and unable to report that these parts are free of any defects.

We have not undertaken any intrusive investigations as part of our works and as such we can not confirm the substructure arrangements or that the barn is free from asbestos.

This report is solely for the associated conversion of the barn into a proposed habitable dwelling and is for use by Mr J French and the professionals providing advice on the application including its submission to the local authority. This report remains the copyright of LACE Domestic Projects LTD and should not be passed to any third party without written prior written permission from LACE Domestic Projects LTD.

If any clarification is required of any points raised within this report please do contact us.

Yours sincerely,



L Aveyard MEng(Hons), GMICE
Director