

Our Ref. NT/F4552/1
14th September 2012

Gary Hoerty Associates
6 – 8 Church Street
Clitheroe
Lancs
BB7 2DG

Dear Sir,

**Re: Barn at Sheep Fold Farm, Balderstone Hall Lane
Balderstone, Blackburn BB2 7LA**

Structural Appraisal

We would confirm having visited the above property as instructed in order to carry out a visual inspection and to report on its general structural condition, in particular on its suitability for conversion to a habitable dwelling, and this report is restricted to these specific matters.

The report was instigated in respect to the requirement under the Planning Submission for a structural appraisal of the building.

The barn is constructed generally of solid masonry walls, part brick and part natural stone. The building has suffered a prolonged period of lack of maintenance which has lead to a deterioration of the fabric of the building in certain areas.

The construction is thought to date from around the 1800's with some areas of more modern date.

The buildings may be conveniently subdivided into 4 areas.

- 1) The small, brick structure to the left hand gable.
- 2) The stone barn.
- 3) The brick barn.
- 4) The steel framed storage building.

An external inspection was carried out and the following observations recorded.

Brick structure to the left hand gable (approx. 6x6.5m on plan)

This portion of the building is constructed of red clay brick. The roof structure has partially collapsed. The roof coverings consisted of asbestos sheeting.

Examining the walls, these were in reasonable structural condition and of acceptable alignment. There are a relatively small number of damaged/ spalled bricks, but these do not have a significant effect on the structure. The lintels above the openings had generally failed. No meaningful inspection of the floor could be made due to the roof debris. It was evident that there was a further building.

Main Stone Barn (approx. 18x11m on plan)

This is the oldest part of the barn complex. The construction is of solid stone masonry walls with traditional timber purlin and rafter roof with stone slate tile finish. The purlins are supported intermediately by traditional king post trusses. There is a first floor to the barn which is of timber board and joist construction. The rear of the barn is a single storey lean to area. The roof to this area has collapsed some time ago and there is abundant vegetation growing within the curtilage.

In common with most agricultural buildings of the period, the barn is exhibiting a degree of lateral movement of the walls. This does in the main appear to be of a longstanding nature and generally is not of a sufficient scale as to materially affect the structural integrity of the building once converted. There has been a localised collapse of the wall at the front left hand corner; this is thought to have been associated with the collapse of a lintel over the opening. This does appear to be of a localised nature. Throughout the elevations there are localised defects of poor lintels, pointing and some distorted masonry to the top of the walls, particularly to the lean to area. The roof structure did appear to be in fair condition and did appear to be performing adequately.

The roof coverings were generally intact over the main area. The roof structure to the lean to area has been completely lost.

No meaningful inspection of the floors could be made. The first floor construction was generally in rather poor or very poor condition and is largely unserviceable.

To the right of the right hand gable there is the remnants of a timber frame. This area does not form part of the conversion and offers no meaningful support to the beam construction and therefore may be safely removed without adverse effect on the barn.

The Brick Barn (Dairy Milking Parlour approx. 11x11m)

The front elevation does exhibit a notable twist, particularly over the area of the former barn opening. The general structural condition of this area is judged as fair and reasonable with the exception of the roof area to the rear 'lean to' area where the roof structure has partially collapsed.

Steel Framed Building

This is a single storey steel framed building. This building does not form part of the proposals and no further comment will be made.

When assessing the suitability of the conversion of agricultural buildings to habitable use it is necessary to consider the criteria for acceptance somewhat different than that for a new build. The degree of historical movement in the structure is, in our opinion, much less onerous than that for dwellinghouses and the discrepancies tend to be judged more as 'character' rather than defect. The scale of movement of this complex is similar to that on many such buildings we have surveyed and proven to have achieved successful conversion. In common with the style of the buildings, there is a need to provide new ground and first floor constructions and to provide a stiffening internal block lining. A further consideration is to minimise the disruption to the existing walls, as often this can lead to a disproportionate area being affected to get back to sound construction. The proposals generally limit the formation of openings and where they are to be formed they are generally at the top of the walls, thus minimising the above effect. The exception is the right hand gable and this is of brickwork rather than stone and the above effects are generally less. The provision of additional structure to the left hand gable will improve the stability of this wall.

In order to bring the buildings into habitable use will not require extensive rebuilding of the external walls. The reintroduction of the 'lean to roof' will provide additional buttressing to the main structure. The retention of the building and the proposed extension to the left hand gable is considered beneficial as it provides buttressing to the left hand gable.

The necessary rebuilding works to the external walls in order to ensure satisfactory structural performance are generally as follows.

- 1) Rebuild the area of collapsed masonry to the left hand end of the front wall (North East Elevation) (approx. 3m wide x full height).
- 2) Replace all failed timber lintels and repair masonry over locally (superficial area).
- 3) Regulate top of 'lean to wall', say 500mm average height, and repair local defects (approx.20m²).
- 4) Carry out localised repointing.
- 5) Carry out miscellaneous local repairs say 15m².

The above represents less than 10% of the external wall area.

In addition to the above repair, it will be necessary to stiffen the structure to improve its robustness. This may be most readily achieved by the construction of a new block lining wall to the interior face. This serves several purposes, enhanced stiffening of the building, provision of a cavity to enhance the weathertightness of the accommodation and to provide a location for the insulation. It will also benefit certain rooms by plumbing and squaring up the construction (kitchens and bathrooms). The provision of the wall also allows the loadbearing elements such as the floor and roof to be carried on it, reducing the foundation load to the original building. The block lining wall should be securely tied to the original external walls to enhance their stability.

The existing ground floors (where they can be seen) are generally unsuitable for inclusion in the conversion due to their construction, sloping nature and lack of insulation. We recommend that these are either taken up (generally) and new reinforced concrete slabs introduced with thickenings to carry the loadbearing elements. Where practical, the existing floors could be left in place and overlaid by the new floor construction.

We are of the opinion that the whole of the first floor construction should be replaced with a new floor supported on the new block lining wall and internal loadbearing walls.

The roof structure is in fair condition over the barn, but does require localised repairs. There is sagging due to deflection of the purlins. There are two options here; the existing roof structure could be replaced or the existing could be retained. If the retained option is adopted, we would recommend that the coverings are stripped and re-laid on new felt and battens (the structure being repaired as necessary) and to improve the alignment of the rafters packing would be required. All jointing of timbers should be overhauled and re-fixed as necessary. The roof to the small front area and to the 'lean to' will require replacing completely.

Suitable new rainwater goods will be required to appropriately dispose of the rainwater run off.

Further matters that require attention/ consideration are.

- 1) The removal of the asbestos products must be carried out in accordance with current legislation and good practice guides.
- 2) It would be prudent to allow for the treatment of all retained timbers against rot attack.

We have examined the details for the proposed conversion and it does appear to be sympathetic to the structural arrangement.

Subject to the above, we are satisfied that the barn may be safely and suitably converted to habitable use without recourse to significant rebuilding.

This report is based on our single visual inspection; we did not have opportunity to monitor the property over a period of time.

This report is not a Building Surveyors Report that would cover such items as damp proof course, rainwater goods and services that may be considered to be part of the fabric of the building.

We have not checked member sizes for compliance or otherwise with Building Regulations or British Standard Codes of Practice.

We have not inspected any area not readily accessible and as such we cannot comment that any such part is free from defect.

We have not exposed the foundations nor tested the drains as all the above are beyond our brief.

We trust the above provides you with the information you require at this time, however, should you need any further assistance with this matter we would be pleased to receive your further instruction.

Yours faithfully,



N. Toole

Foxx Limited

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