
Structural Conditional Report For

Existing Barn at, Water Slack Farm, Cawthorne, Barnsley

Prepared for:
Nuttall Yarwood & Partners
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Introduction

A planning application has been submitted to convert the existing barn and adjoining stable buildings into habitable living accommodation. The following report has been commissioned to assess the suitability of the structure for the proposed change of use.

The structure is a detached stone built barn forming part of Water Slack Farm, Cawthorne, Barnsley, and is situated in a courtyard area behind the existing farm house. The structure comprises of the main barn with adjoining stable building, glass house and styers. The main barn has existing 1st floors to part of the floor plan. The adjacent stable also has an existing 1st floor to the full floor plan. The glass house and styer buildings are proposed to be demolished and therefore are not considered in this report. The barn is currently not used for farming purposes or for the keeping of livestock.

The report covers the existing construction and condition of the buildings and defines possible remedial, works where necessary, to support the proposed change of use.

Inspection Survey

A survey was carried out on the 16th January 2013 and consisted of a visual inspection of the entire structure. Access was available to all elevations. Internal areas were inspected but access was not gained to any of the existing 1st floor areas.

Detailed survey drawings have been produced by Nuttall Yarwood and Partners along with proposed plans for the change of use.

Building Construction

External Elevations

Both the main barn, and adjoining stable, have duo pitch roofs with gable ends. The front elevation of the barn faces into the courtyard to the rear of the farm house, with the side and rear elevations facing open fields. All elevations are of stone construction.

Front Elevation

This elevation comprises a double door into the main barn with access doors either side, under each of the barns 1st floor areas. There are 2 existing window openings in the main barn. There is also an access door into the adjoining stable building. The stone work façade is generally in good condition, there are areas around the stable door jamb and the double door reveal where the stonework has significantly weathered. Walls are approximately 450mm thick but we would suggest weathered sections should be replaced for integrity.

Some areas of the external wall appear to have no bed joint mortar giving the appearance of dry walling. An area of the external wall, above the RHS access door, appears to dip along the line of the bed joints giving the appearance that the wall has sagged. Further investigation may be required to assess the adequacy of the existing stone to this section and determine if remedial works are necessary.

Door Lintels to the main double door and stable door are timber. We would suggest these may need replacing to provide increased integrity.

To the right side of the elevation there is a substantial growth of ivy branches which have spread up the full height of the barn and over approximately 30% of the roof. Branches have also grown over and under the eaves up the right hand gable. This growth appears to have grown under some of the roof tiles and under the upper apex of the gable. The ivy requires removing and the roof repairing and top section of the gable rebuilding, the extent of works is unknown until all of the ivy has been removed.

The roof line appears sound with no major sagging of sections. The structure to the roof slopes appears intact to all areas.

Side Elevation (LHS)

Walls generally appear sound with no bed joint mortar to some areas. There is an existing window in the apex at 1st floor level, this is to be retained

The eaves would appear to have spread a little and a lack of possible restraint to the gable apex has caused the top section to lean out.

Some stones at lower level appear to be pushed proud of the main wall line. There is no sign of significant movement in the wall. This may be just how the wall was constructed or due to some ground movement. Possible further investigation may be necessary.

Rear Elevation

This comprises a double door into the main barn which lines through with the door on the front elevation. There are 2 areas to this elevation requiring structural remedial works. Adjacent to the door there is evidence that the stonework has dropped, either due to eaves spread or lack of support vertically up the side of the opening. In addition at the LHS corner, facing towards the farm house, there is an open crack in the wall extending from the base to the eaves. This suggests that there has been some ground movement on the corner. Further investigations are necessary to establish the cause and extent of any remedial measures.

Side Elevation (RHS)

As previously described the growth of ivy has caused damage to the upper apex of the gable to an extent where the ridge line has been pushed out. The ivy requires removing and the roof and gable apex may require taking down and rebuilding.

Internal Areas

From the inside of the building the floor construction varies from stone cobbles, in the stables, to stone flags in the main barn. Floor levels vary between buildings, thus when the floors are dug out adjustments should be made. In addition tanking etc can also be provided.

The main barn has a full height open area through the main doors with the 1st floor areas located either side. The area to the LHS has an internal separating wall up to 1st floor level. Access to the undercroft on this side is via the left hand door on the front elevation.

The roof structure is open to view from this central area. The structure comprises three No. timber roof trusses supporting purlins with jack rafters. There is no lining to the inside of the

roof. Two of the trusses appear in sound condition but the 3rd, over the RHS 1st floor area, has been strengthened with the inclusion of a secondary support truss. This is strapped alongside the original truss. Generally the roof is sound but there are areas where ivy growth has disturbed tiles allowing water ingress plus sections of the ridge are open to the elements. We would suggest that a timber specialist is brought in, prior to work commencing, to assess the integrity of the timber trusses and purlins, all of which are proposed to be retained.

1st floor areas are proposed to be replaced with new. Some materials can be retained but additional strapping of the walls to the floors should also be provided to give effective restraint to the walls.

Conclusions

From the visual inspection carried out we suggest that the structure would appear generally suitable for conversion. Remedial works will be necessary to the external elevations to ensure stability / integrity of the main walls and roof which will also be required to comply with current building regulations. These works will include, but not be limited to, repointing areas of the facade, the rebuilding of some sections of wall, brick work repair treatments and brick work replacement to weathered areas.

There is already a 1st floor in the structure, the extent of which is to be retained in the proposed scheme. The fact that there is already a 1st floor means that the founding medium will not be taking any additional loading than has previously been applied. Again some areas will require remedial works / replacing for structural integrity and to comply with building regulations.

Reviewing the current proposals for the conversion the building would appear to be dimensionally suitable. The proposals retains much of the form of the structure as it stands, i.e. external openings, internal walls, roof truss locations, 1st floor plan, and thus structurally the building is not doing anything different than at present.

Due to weathering and vegetation growth some sections of the building have lost their integrity and require reinstatement. Other areas may require attention due to the apparent lack of bed joint mortar. In addition further investigations will be required to ascertain if underpinning to

certain areas of the building is necessary. Thus converting the barn into living accommodation is a question of economics.

Not with standing this the structure should be suitable for conversion and renovation into a single dwelling for living accommodation.

Signed : *Ian R Thorpe*

Date : 18th January 2013

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