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Chkd: jawood

Date: 31 October 2018

Hamish Gledhill
Acumen Designers & Architects
Headrow House
Old Leeds Road
Huddersfield
HD1 1SG

Dear Hamish

Re: Barn 2- Staley Royd Farm, Jackson Bridge, Scholes, For Mr I Conroy

Further to the instructions I received from Mr I Conroy, I surveyed the above property today. The purpose of my survey was to comment upon the structure of the building, which I understand is proposed to be the subject of a Planning Application, for change of use to a domestic dwelling.

General Description

The building is located in the farm yard at the above property and is rectangular on plan, with the left elevation partly retaining the ground. At the rear of the property is a lean-to shelter with the lower parts of the rear wall and left wall of dry stone construction. These we presume are the retaining walls to the yard, which rises up from the rear right corner of the property to the left corner and then continues down the left side of the property.

For the purpose of this report the front elevation is the gable wall facing the yard, which contains the main opening into the building and is shown on plate 1.

The external walls are of stone construction externally, with brick inner leaf. The overall thickness of the walls is 430mm, the wall having a 6inch stone outer leaf and 110 brick inner leaf. The brickwork returns around the window and door reveals to be 9inch, plus a small cavity at the reveals.

The roof is dual pitched, spanning parallel with the front elevation and is clad with local natural stone slates. The floor is concrete ground bearing.

Internally the roof is supported on two queen post trusses with three purlins to each roof slope.

Structural Condition

An inspection of the external faces of the barn revealed the following:

Front Elevation

The wall is reasonably plumb. The pointing is old and there are several fine cracks in the pointing. This elevation and other elevations will require repointing, during the conversion works. A dominant opening has been formed in this elevation and steel lintels formed across using what appear to be channel sections, back to back, with the gap between the inner and outer channels bridged by bricks. There is rusting and lamination of the steel beams and the beam appears to be slightly undersized for the size of the opening. This

Brighouse

Woodvale House
Woodvale Road
Brighouse
West Yorkshire
HD6 4AB

telephone

01484 400691

email

brighouse@jnpgroup.co.uk

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beam will have to be replaced during the course of the renovation works. The verge line to the roof appears to be in good condition.



Plate 1- Front Elevation

Right Elevation

This elevation has three windows, with stone heads and sills. See plate 2. There are no gutters to the roof. The sills appear to be reasonably horizontal. The pointing is in poor condition. The pointing is particularly poor at higher level, possibly due to rain water running down the roof onto the surface. There are a few hairline cracks in the wall, however, these are old, and movement does not appear to be progressive or significant. The most significant cracks are beneath the rear right window, here damage appears to have been caused by corrosion of a fixing to the wall. Corrosion of metal fixings causes expansion of the metal which in turn, transfers the forces into the stonework resulting in splitting of the stone.



Plate 2- Right Elevation

Rear Elevation

The pointing to the rear elevation is in good condition as at lower level the elevation has been protected by the lean-to roof. Above the lean-to roof the pointing is a little more weathered and there are loose stones close to the rear right corner at eaves level. This is where mortar has become washed away. Apart from this one area, the elevation appears to be in good condition. There are no signs of bulging or downward movement. See plate 3.



Plate 3- Rear Elevation

Left Elevation

The left elevation again has no gutter. The ground level is up to the window sill level and we presume that the ground has been filled in at this location. The retaining wall towards the rear extends further to the left side and it is possible that there is a wall behind the soil at this location. If possible, the ground at this side of the property requires lowering in order to prevent damp ingress into the building. Parts of the elevation that can be seen, appear to be in good condition, though repointing is required. See plate 4.



Plate 4- Left Elevation

Internal Inspection

The internal dimensions of the barn at 9.7m front to rear and 8.6m left to right. Two trusses are seated on panels of masonry formed between windows in the left and right elevations and are at approximately third locations front to rear. Rafters along the length of the building are tight to the ridge board, indicating a lack of outward spread of the roof structure. All purlins show no signs of significant movement or "shakes".

A close inspection at the ends of the purlins where they are built into the front and rear walls could not be made, however, there are no visual indications of rot. The queen post trusses are of significant size and show no signs of significant deflection. The bottom cord of the rear queen post truss may have deflected slightly, as there is a slight gap between the left post and the bottom cord. Internally the brickwork is vertical and shows no signs of cracking. There does not appear to be any header bricks indicates that the inner leaf is 110mm wide. There are through stones seen in the inner leaf of brickwork indicating that the two leaf's are tied together by stones and not metal wall ties.

At the time of the inspection the building had plant and tractors stored and the floor was almost fully covered, however, those areas that could be seen showed no signs of cracks or movement. The inner lintels over the rear door and the six side windows are timber and these appear to be in good condition, though the lintel to the first window did show signs of staining, which may be due to damp.

Comments and Recommendations

This building appears to be in good structural condition with no signs of downward movement or significant outward movement. The building requires repointing. There are no gutters to the roof structure which has allowed rain water to pour down the side elevations of the property, causing washing out of the mortar joints.

The roof structure appears to be in good condition, however, the building will require reroofing as part of the renovation works. During this time, I suggest that the ends of the two trusses are inspected along with the ends of all purlins, where these are seated into external walls to make sure that there are no indications of decay to the timbers, that have been in contact with external walls. All timbers remaining in the property will have to be treated.

The internal lintels to the property are timber and whilst these show no signs of any significant deterioration or movement, we would recommend that these are replaced using pre-cast concrete lintels, during the renovation works.

There are some minor cracks in the elevations which do not appear to indicate any signs of significant structural movement. There is a metal fixing in the right wall which is corroding causing localised damage to the stonework and any metal fixings found in the external walls should be removed.

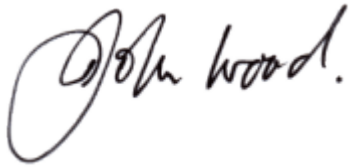
The main structural item is the steel lintel over the prominent door opening to the front elevation. This is showing signs of significant corrosion and lamination and will have to be replaced as, part of the proposed renovation works. Along the left elevation the ground is higher than the internal floor level and will be a source of damp ingress into the property. There is a possibility that a dry stone retaining wall returns around the left side of the property, however, over the years the gap between the wall and elevation of the building may have become filled with soil, etc. This area should be investigated and if a retaining wall does exist the area should be cleaned out to allow the face of the building, to be exposed and remove potential source of damp ingress, into the property.

Conclusion

The property appears to be in good structural condition with no signs of any downward movement or outward movement of walls. The roof appears to be in good condition with no signs of significant roof movement. The trusses have deflected slightly, providing no additional load are applied to the trusses these will be acceptable. The floor also appears to be in good condition, though a full inspection could not be made. The building however, does lend itself readily to be converted into a domestic dwelling. The left and right walls are 9.7m long. I would

therefore recommend that masonry internal buttress walls be provided along the length of the walls in the proposed layout of the dwelling.

Kind regards

A handwritten signature in black ink that reads "John Wood." The signature is written in a cursive style, with the first name "John" being more prominent and the last name "Wood" following it.

J A Wood
BSc CEng MIStructE