

AEC

Architectural and Engineering Consultants

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Our Ref: MAH/klh
Date: 22 September 2014

Mr D Pennington
Sutton Cottage
Brook Lane
Endon
Stoke on Trent
ST9 9EZ

Dear Mr Pennington

Re: Barn Conversion

Further to your recent request, I confirm having visited the property in order to carry out a visual inspection of the existing barn with a view to possible conversion to a dwelling.

My observations and comments are as follows:

1. The site at present consists of a detached stone / brick built cottage with detached outbuildings which consist of a part open storage barn and a detached stone built barn. We understand the site has agricultural usage, although the barns are not used at present.
2. The detached barn is constructed from substantial stone walls with a tiled pitched roof covering. The roof construction is a series of oak king post frames with loose purlins and rafters. There are six door openings around the barn including a large double door opening to the left hand gable from the courtyard. There are five hay loft pitching openings to the barn as well as slit openings to all elevations. We understand the barn is a grade II listed building.
3. Externally, the right hand side elevation, facing from inside the courtyard would appear to lean outwards and there is evidence of fracturing and movement to both the front and rear corners of this elevation. Elsewhere the stone walls to the front, side and rear of the property generally appear to be in a reasonable condition although there are a number of areas which would benefit from re-pointing. The tile pitched roof covering is generally intact.

Cont/d



Chartered Institute of
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4. Internally the barn is split into two separate areas with a partial party wall which is constructed from solid brickwork. There is a substantial opening within the brick party wall which is supported off steel beams. The left hand portion of the barn is generally in a reasonable condition although there is slight cracking of the corners of the stonework and minor movement at eaves level. The timber king post trusses, purlins and rafters generally appear to be in reasonable condition with no major evidence of deflection noted. The floor within this section is soil.

The right hand portion of the barn is at two different levels. This is due to the external slope of the site. There is evidence of severe movement to the stonework to the front and rear right corners of the property. Some strengthening/tying has been carried out sometime in the past to the front right hand corner of the property. There is also evidence of movement to the stonework over the side entrance to the lower section of the barn and deflection/movement of the brickwork supporting the roof construction over this area.


The main roof consists of king post trusses with loose purlins and rafters. Repair work has been carried out to one of the trusses and a number of rafters have been replaced. Overall the roof structure is generally in reasonable condition.

5. Two trial holes were excavated to the gables and rear walls of the barn. In both instances the stone wall finishes 200mm below ground level with no spread foundation noted.
6. From the above observations, it can be seen that the barn is in a reasonable condition considering its age and it is therefore our opinion that the barn can be suitable converted to a dwelling without substantial rebuilding works being undertaken. However, there are a few structural items that will have to be considered and these may be summarised as follows:
 - a. Providing a dwarf wall and suitable drainage to the front of the barn would be recommended to prevent water ingress to the barn. This would be below ground and therefore not detract from the stonework to the barn.
 - b. Partial rebuilding work of the stone will have to be undertaken to the rear right hand corner of the property and above the side doorway.
 - c. The stonework to the right hand gable elevation leans out at present. It is not considered that this should be taken down and rebuilt, however tying of the wall can be achieved at first floor and roof level to provide adequate lateral restraint.
 - d. It is proposed to provide a first floor construction within the barn and this can be achieved by either providing a new internal block skin or alternatively a steel / oak mezzanine frame. Either of these constructions can be used to tie the existing walls to prevent further lateral movement occurring.
 - e. Strengthening/repair works are to be carried out to the roof construction, in particular the king post truss within the right hand portion of the barn.
 - f. Reduce existing floor levels to provide adequate height for the first floor construction. Provide new insulated floors to comply with current standards.

- g. Provide suitable damp proofing/tanking to external walls. This may include a detail to the floor to wall connection to prevent water ingress. Obtain timber and damp report and carry out its recommendations in full.

We trust the above is sufficient for your needs, but should you require and further information then please do not hesitate to let us know.

Yours sincerely
AEC Consultants

A handwritten signature in black ink, appearing to read 'M. A. Hodgkiss', written over a set of four vertical lines.

M A Hodgkiss / Eng AMI Struct E Maps