

17th August 2020

Mr & Mrs G Willemsen
Trucketts Hall
Boxted
Bury St Edmunds
IP29 4LJ

Our Ref: BS/10194
Your Ref: N/A

Dear Mr & Mrs Willemsen,

Re: Proposed conversion of existing barn, Trucketts Hall, Boxted.

As requested, we visited the above property on Friday 7th August 2020. The purpose of the visit was to undertake a visual inspection of the existing structure to enable an assessment to be made regarding its suitability for the proposed conversion to holiday let. Following our visit, we report as follows:

Scope and limitations

Our inspection and the contents of this report are confined to the existing barn as indicated on Dean Jay Pearce architectural drawing 20/64/09.

Our visual inspection was principally undertaken from ground level.

At the time of our visit the southern section of the existing main barn was in use as a fertilizer store, with the northern section used for general storage and drying flowers. We have not inspected those parts of the structure that were covered, unexposed or inaccessible and as such we are unable to confirm these areas are free from defect.

Observations and comments

General

The existing barn fronting the road is of principally timber frame construction, measuring approximately 38.5m in length, 5.5m in width, with a height to eaves of approximately 3.0m. A duo pitch roof forming gables to the north and south elevations, supports natural slates. External walls comprise timber frame supported on a brick plinth, the height of which varies.

To the rear of the barn are a number of open bay cart lodges.

External Inspection of main barn

No significant sagging or dishing of rafters was observed, and the ridge line appears reasonably level throughout. (Refer photograph 1). To the east elevation, adjacent the southern gable, some slight localised sagging of the rafters is evident. All roof tiles are generally intact and complete.

External walls throughout are clad in black weatherboarding. The weatherboarding is complete and in good condition. Occasional horizontal movement is evident to both eaves. This movement is perhaps more generally a lean away from the road, in the direction of the prevailing wind.

The brick plinth comprises 215mm solid soft red brickwork laid in a lime mortar. (Refer photograph 2). The height of the brick plinth varies from 400mm to 950mm above ground level. No significant cracking is evident. Lead flashing is dressed over the top of the wall. Generally, the brickwork is in good condition, however occasional localised loss of the face of the brickwork and mortar is evident.

Internal Inspection of main barn

The roof structure to the main barn comprises a traditional cut roof with rafters at typically 400mm centres, supported by a mid-height purlin, which is in turn supported by timber collars at approximately 2m centres. The top of rafters is boarded throughout. A number of what may be the original rafters have been replaced with regularised sawn timbers. From the limits of our visual inspection, timbers forming the roof appear in good condition. Connections between rafters, purlins and collars appear sound. (Refer photograph 3).

There is no evidence of significant racking of the rafters.

Resistance to roof spread is provided by eaves timbers spanning horizontally between timber tie beams at approximately 3m centres. The eaves timbers appear in good condition. Within the barn used for general storage, the connection between the eaves timbers and tie beams appear sound. Within the fertilizer store, to a number of the tie beams, some opening of the joint between the tie beams and eaves timber is evident.

External walls comprise studwork at typically 400mm centres, with principal posts at tie beam locations. There are no diagonal braces or timber haunches at the junction of the tie beams and principal posts. A number of what may be the original studs have been replaced with regularised sawn timbers. Generally, the timber studs appear in good condition. Where visible, the existing timber sole plate is also in good condition. Diagonal timber bracings have been provided to both the east and west external walls. (Refer photograph 4).

To the fertilizer store, 215mm thick reinforced hollow blockwork walls have been provided internally. These walls are remote from the external walls of the barn.

Inspection of cart lodges

No significant sagging or dishing of rafters was observed, and the ridge line appears reasonably level throughout. All roof tiles are generally intact and complete. The roof structure comprises a traditional cut roof with rafters at typically 400mm centres, supported by a mid-height purlin, which is in turn supported by king post trusses at approximately 3m centres. Resistance to roof spread is again in part resisted by the eaves timbers spanning between trusses.

All timbers generally appear in good condition.

Whilst the roof is unbraced, there is no evidence of significant racking of the rafters.

Discussions and recommendations

Based upon our visual inspection, in our considered opinion the barn has been well maintained, and the brick plinth and timber frame are in good condition, with no significant timber decay observed.

We understand it is proposed to provide a vaulted ceiling throughout the existing barn as part of any conversion. As is perhaps typical, a structural analysis should be undertaken of the roof structure to consider its suitability for the additional loading, however at this time we would consider it likely that should any works be required, this is likely to be limited to providing additional timber collars between purlins.

In our considered opinion, the horizontal movement observed to both eaves is the result of the absence of sufficient intermediate buttressing or bracing along the length of the building, together with occasional failure of the connection between tie beams and eaves timbers. We would recommend the connections are inspected and repaired/strengthened as required, the details of which should be designed and detailed by a structural engineer. The provision of internal non-loadbearing stud partitions as part of any conversion, will provide the intermediate buttressing and overall stability required to restrain the roof structure and external walls in place. Again, these buttressing walls would require to be designed by a structural engineer.

Where there is a loss of mortar to the brick plinth, this should be repaired using a suitable lime mortar to ensure water tightness.

Conclusion

In our considered opinion the existing barn would be suitable for conversion to holiday let with a minimal degree of works to the existing structure. The principal works which we would consider to be appropriate are as follows:

- Strengthening of roof, if required, following analysis by a structural engineer.
- Reinstate and reinforce, if required, the connection between the eaves timbers and tie beams.
- Provide intermediate non-loadbearing stud partitions to restrain the roof and external walls in place.
- Repair damaged face brickwork.

We trust we have considered those items you wish us to address, however should you have any queries or require further information, please do not hesitate to contact us.

Yours sincerely,



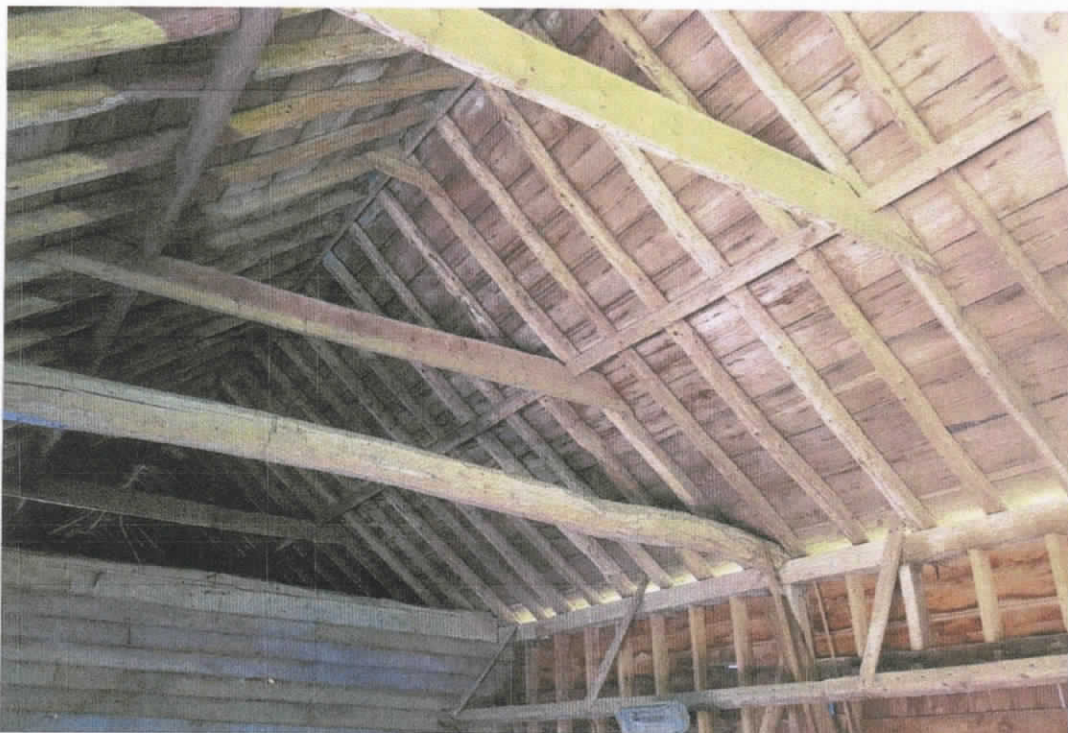
On behalf of Brett Design LLP



Photograph 1.



Photograph 2.



Photograph 3.



Photograph 4.