Structural Comments
For Planning
22 August 2023

The Rowans
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1. Introduction

We attended site on the 22nd August 2023 to inspect the main roof of the house, assess the structural stability and suggest remedial works. The use of the building is to remain unaltered and is to be used for residential purposes.

2. Description

The main roof has a thatch covering. The first floor is divided into a main and secondary bedroom.



The roof structure consists of timber rafters supported on a single purlin each side which are in turn supported by a central timber A-frame and frames at each end.



The rafter ends are supported at mid first floor height on a timber framed external wall with masonry infill panels. This first floor wall is separated from the ground floor wall by a timber plate embedded in the wall.



The floor structure ties the ground floor walls together but there is no means of tying the front and rear first floor walls together. There is evidence that the joint between the collar and rafter of the roof frames is failing. This has been repaired in one instance with the insertion of a timber post.



The timber purlins span 3.85 metres and have noticeably deflected along their length. This has allowed the rafters to rotate about the purlin and produce a horizontal thrust on the top of the first floor wall. This has resulted in the external wall leaning outwards on the rear elevation by 15 degrees.



Water has penetrated the lower section of rafters resulting in timber decay. This coupled with the outward lean of the wall has left these rafters unsupported.



There is further decay to the timber embedded in the wall at first floor level which has exacerbated the outward lean.



Recommendations

Repair works are needed immediately to stabilise the structure.

Temporary propping should be provided along the line of the rear purlin in the main bedroom.

The roof covering should be removed from the lower section of the rear roof to the main bedroom.

All rafters above the main bedroom can then be inspected for decay and replaced as necessary with similar materials.

The first floor wall of the main bedroom should be taken down and rebuilt ensuring that the embedded timber is sound. If it is not, then it should also be replaced.

The purlins should be reinforced with the addition of steel angles bolted to them.

Additional timber posts should be added beneath any failed collar to rafter connections.