

S. Butler
Chartered Surveyor and Home Inspector
234 Derby Road, Chellaston, Derby, DE73 6RU
(01332 702225)

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Dear Sir

The Old....

Instruction

To investigate suspected decay of roof trusses at the above property.

Background:

The property is a large brick walled slate roofed building constructed in about 1923 to accommodate pumping equipment. In recent years it has been converted to a dwelling.

Following a recent purchase of the property the new owners have discovered suspected decay in the feet of a number of large roof trusses.

The purpose of this report is to consider if the trusses are decayed and what remedial works are required.

Roof Construction:

The pitched slate roofs faces are likely to be supported by hidden rafters with a total span in the region of fifteen feet on each face of the roof.

Intermediate support for the rafters on each face of the roof is provided by two equally spaced horizontal timbers, pulins, with a width of about 5 inches and a depth of at least 9 inches although parts are hidden by a timber cladding on the underside of the roof face. The horizontal supporting timbers span about sixteen feet between a series of substantial roof trusses.

Each truss comprises of a bottom horizontal chord clear spanning the twenty four foot depth of the building with a width of about five inches and a depth of about ten inches. The diagonal chords that form the faces of the trusses are constructed of approximately five inch square timbers. There are similarly sized timbers forming the internal web of the truss and an approximately ten inch by five inch vertical king post.

Above the diagonal chords of the trusses there are approximately five inch square timbers that sit on the faces of the chords. The purpose of these could not be confirmed. They may support the edges of the boarding to the underside of the face of the roof. It was concluded that they are not bearing a great load. I refer to them as spacers for convenience.

Photograph 1 shows the general arrangement of the truss.

Decayed Areas:

Inspection was from the floor of the first floor rooms and using a ladder with a height of about ten feet. There were no invasive investigations. Areas of decay referred may thus be found to have affected a larger area than refer to in the following paragraphs.

South West Bedroom – Horizontal Chord

The horizontal chord of the central truss has an area of decay close to the top of its east face immediately adjacent to its bearing into the south wall of the property. The decay affects a surface area of about three inches by two inches. The depth of the decay into the beam is not known. There is no reason to suspect the decayed area extends to the area of the beam that is concealed within the wall. The area of decay is shown at Photograph 2

The timber in the area of decay was dry at the time of inspection suggesting that the decay is historic

Given the apparently small area of decay in relation to the size of the timber it is considered that the decayed area of wood can be chopped out and filled to match the existing face of the timber.

South West Bedroom – Diagonal Spacer

There is an approximately six inch by two inch area of decay along the top of the east face of the spacer at its top edge. The depth of the decay is not known. It is considered unlikely that the timber substantial penetrates the wall.

The timber in the area of decay was dry at the time of inspection suggesting that the decay is historic

Given the small area of decay and that any load is likely to be in compression it is considered that the decayed area of wood can be chopped out and filled to match the existing face of the timber.

South West Bedroom – Diagonal Chord

The bottom of the chord has decayed where it sits on top of the horizontal chord. An area of about eight inches by three inches by two inches has decay on the bottom and west face of the chord as show by Photograph 4.

The timber in the area of decay was dry at the time of inspection suggesting that the decay is historic

It is considered that the chord can be repaired with a resin or combination of resin and splicing in new timber. As the bottom edge of the chord is likely to be in tension it is likely that any repair will require strengthening with metal pins similar to those shown on the attached sketch at Photograph 5. The chord may also require pinning to the horizontal chord if the area around the hidden fixing is found to be decayed as shown in Photograph 5.

South East Bedroom – Horizontal Chord

The horizontal chord of the central truss has an area of decay on its east face. The decay affects a surface area of about one inch by two inches. The depth of the decay into the beam is not known but is believed to be superficial. The area of decay is shown at Photograph 6

The timber in the area of decay was dry at the time of inspection suggesting that the decay is historic

Although the end of the Chord is in tension given the apparently small area of decay in relation to the size of the timber it is considered that the decayed area of wood can be chopped out and filled to match the existing face of the timber.

Cosmetic Finish

Consideration should be given as to whether any resin should be finished slightly below existing surfaces to allow a furniture restorer or similar to match the face of the repairs to the existing timbers.

Costs

The work is bespoke and not covered by costs tables. Quotations should be obtained from a number of contractors specialising in this area of repair.

Yours faithfully

Steve Butler

SJM Butler



1) General Layout of the roof structure



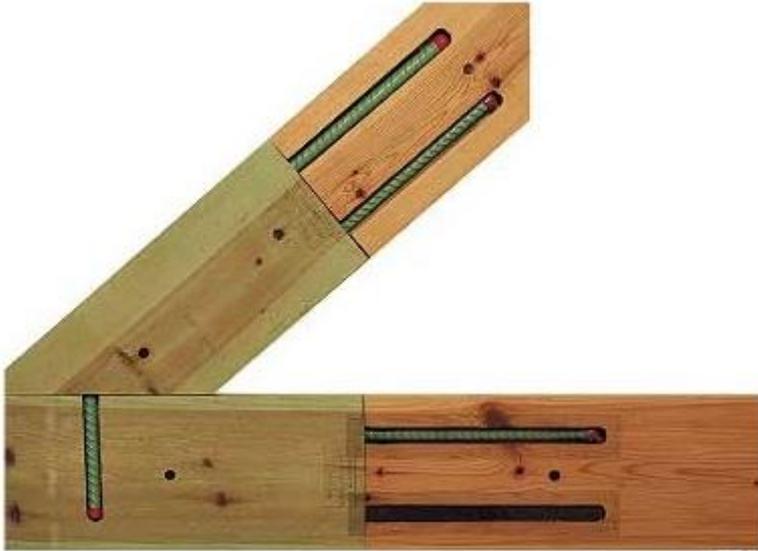
2) Approximately two inch by three inch area of decay on the horizontal chord immediately adjacent to the face of the wall.



- 3) Approximately 6 inch by two inch area of decay appearing black along the top of the diagonal spacer.



- 4) Approximately eight inch by two inch by two inch area of decay on the bottom edge and face of then diagonal chord



- 5) At the subject property pins will be required in the diagonal chord and possibly to help secure the diagonal chord to the horizontal chord



- 6) Small area of decay on the east face of the central truss in the south east bedroom.