



19 March 2025

Ian Gatt,

Dear Ian,

Review of main house roof structures at Old Rectory, Wingfield

It was great meeting you on Thursday 13 March at your property and discussing the required structural work along with Mark O'leary, Roland Newman and Simon Wynn. Purpose of the visit was to agree roles and scope of work for the team, as well as carry out an initial inspection of the structural condition of the roof structure over the Northwest bedroom (referred to as roof space A from here onwards) and in the loft space, roof void (referred to as roof space B).

Our inspection consisted of visual observation and light probing of accessible roof members with a screwdriver. No intrusive methods of investigation were employed as part of this initial visit. Access to these spaces was relatively limited. A ceiling access hatch enabled head and shoulders inspection of space A, while limited access was available through a door in space B. We were requested to access and review only these two spaces, so our commentary here in does not cover any other areas of the building. A cursory/brief view of the SE roof void was also carried out, but we understand this relates primarily to timber treatment specialist work rather than structural repair assessment. Our comments do not cover defects relating to wood boring insects (we understand this will be covered by other members of the team).

At the time of our visit no architectural or survey drawings were available. Mark Oleary had provided his initial building surveyor's report, which we have reviewed. The weather at the time of our visit was sunny and relatively dry, following sporadic rain over the previous days. The property is Grade II listed (list entry: **1021892**).

Observations

The roof structure in space A is of traditional cut timber construction. It consists of a timber ridge member and one purlin per pitch, which support common rafters at regular centres. A series of collar beams have been provided between the two purlins propping them against each other. The roof displays deformation as a result of the RHS purlin end, adjacent to the access hatch, slipping out of its pocket on the masonry wall. The pocket itself is shallow, which potentially in conjunction with historic timber shrinkage, resulted in the timber end slipping. Despite the deformation, the condition of the purlins, rafters and ridge in this roof section is reasonable (as far as the limited access allowed to inspect). Limited decay was observed on the timber wall plate supporting the ridge beam end over the access hatch.

A crawling space to the RHS of the roof appears to provide limited access to the roof space over the associated bathroom. No access was possible at the time of our visit in this secondary roof space.

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Within the same bedroom, and just over the headboard of the bed, a large timber beam is bedded in the wall. Despite a number of imperfections (expected for a timber member of such age), one slightly larger vertical fracture was observed and noted.

In roof space B, the roof configuration is very similar to space A. A ridge member and one purlin per pitch support common rafters at regular centres. Collar beams are present between the two purlins. Similarly, shallow pockets on the masonry walls have resulted in the RHS purlin end to slip, along with the ends of the first 2 rafters in the same section of the roof. Slippage of the purlin end has resulted in drop of the member, triggering dropping of the associated collar beams and deformation of the now poorly supported rafters.

The timber wall plate supporting the ridge end over the access doorway, along with the first rafter to the LHS have been impacted historically by water ingress.

Conclusions

The timber members in both roof spaces appear overall in reasonable condition (as far as the limited access enabled to view). However, slippage/shrinkage of timber members from their wall pockets has resulted in notable deformations. Isolated areas of water ingress are also suspected. The timber beam over the headboard of NW bedroom, despite not showing recent signs of distress, would be prudent to be provided with a holding repair. Inaccessible roof spaces associated with the inspected sections of roof should also be reviewed and repair requirements considered as part of this exercise.

Recommendations

It is understood that the intention is to maintain the roof structure in its current deformed condition. This should not be detrimental to the structural performance of the roof, subject to some additional, modern support provided, to compensate for the loss of integrity resulting from slippage of timbers off their wall pockets.

In roof space A, a new timber purlin member should be provided to prop the common rafters on the RHS. An allowance should be made for the purlin to be spliced to enable installation in the tight space. Softwood packing to the underside of the deflected rafters will be necessary to facilitate the varying levels. Steel bracketry will also be needed, to ensure the ends of the new purlin are secured on the masonry wall, mitigating the risk of new slippage due to the existing shallow pockets. New horseshow steel brackets should also be provided to secure the ends of the existing timber members where necessary. To ensure adequate robustness is reinstated, allowance should be made for providing new softwood noggins fixed with woodscrews between all existing common rafters, existing and new purlins.

The repair approach would be similar for roof space B. In this case the new purlin can be provided as single length thanks to easier construction access arrangements.

The cracked beam behind the bed headboard, should be pinned with resin fixed stainless steel dowels, installed diagonally to bridge the fracture.

The above observations conclusions and recommendations have been drawn based on a visual inspection with limited access. Provision should be made for further investigation, particularly focusing on the bearing ends of purlins, common rafters and ridge beams to ensure no decay has been incurred due to localised water ingress. A thorough review should also be carried out at eaves/wall plate level, to ascertain any repair or replacement requirements for these often-vulnerable members.

Any recommended details herein, are subject to detailed structural calculations to dictate exact structural sizes and fixing requirements.

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I hope the above provides clear guidance on the initial repair requirements of the accessed roof spaces. We are happy to review further and commence detailed structural design upon your further instructions.

If you have any questions, please do not hesitate to contact us.

Yours sincerely,



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Senior Structural Engineer

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