

Our Ref: 12018
Date: 29th January 2025

Mr Ben Curd
Planned Maintenance Surveyor
New Forest District Council

By email

Dear Mr Curd,

Fire Damage at 13 Hyde Close, Sway.

Thank you for appointing R Elliott Associates Ltd to inspect the roof timbers at 13 Hyde Close, Sway, following a fire in August 2024. A site visit was carried out on Wednesday 22nd January 2025, during which part of the house was inspected internally.

The survey was carried out to determine whether the existing timbers would still be adequate for re-use following the fire and if any repairs that would be necessary. For ease of reference during this report, the property is taken to face south, although this may not be the exact orientation.

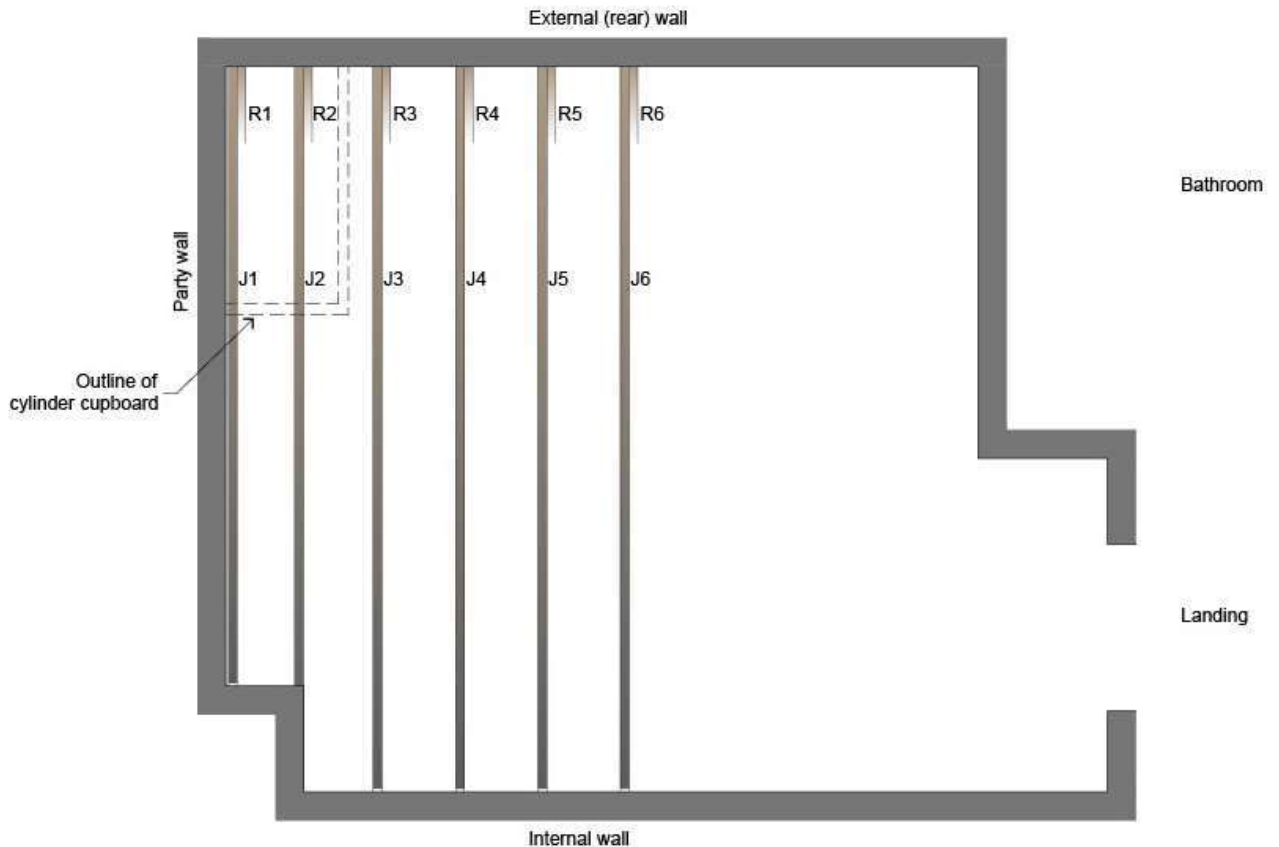
The property is a semi-detached two-storey house constructed in cavity wall masonry with a timber cut roof and concrete tiles.

The fire started in the cylinder cupboard on the first-floor rear bedroom and spread out in to the room, affecting the roof timbers above and the floor timbers below. The floor joists were not sufficiently accessible to provide an assessment, so this report focuses on the ceiling joists and rafters above the rear bedroom.

Much of the ceiling still has a plasterboard finish but there were six ceiling joists that were exposed, to varying degrees, that could be assessed for damage, along with the rafters above that were accessible for inspection. The plasterboarded areas were not included in this assessment.

The methodology for this survey was to determine the remaining section of the timber sections by removing the charred timber from the external face of the timbers in a small area in what appeared to be the worst affected areas. The remaining section was measured and the section size subsequently analysed to confirm whether the timber would be suitable for re-use or require replacement.

The original timber sizes of the joists and rafters are:
Ceiling joists: 38x100mm at 380mm centres approximately
Rafters: 38x100mm at 380mm centres approximately



The table below shows the results of the assessment:

Rafter	R1 38x100	R2 38x100	R3 34x99	R4 37x99	R5 38x100	R6 38x100
Joist	J1 35x98	J2 34x99	J3 33x100	J4 34x94	J5 33x100	J6 38x100

The wall plate was visible on the upper face and this was probed in a couple of locations to test the timber and was found to be blackened on the surface but sound underneath. The connections between the rafters and the joists at the eaves were not tested.

Following analysis of the timber sizes using current design software, it transpires that the original specification of 38x100 would fail current day requirements in deflection by 5%. Not surprisingly, where timbers had been affected by the fire, the potential deflection was found to be more pronounced, failing further than current permissible limits.

The timbers would only fail in deflection, meaning that if retained, they would not snap but would be more likely to cause cracks in the ceiling where the timbers might sag further. For example, J3 would deflect by 20% more than the permissible limit and J4 would deflect by 40%. The way to prevent this would be to reinforce the existing timbers with additional timbers alongside. Such reinforcement would take the form of 38x100mm C24 timbers fixed with M10 bolts at 600mm staggered centres with an overlap with unaffected timber of 0.5 metres. An alternative is to replace the timbers in line with current regulations.

The sections that are recommended to have additional reinforcement are shown as red as follows:

Rafter	R1 38x100	R2 38x100	R3 34x99	R4 37x99	R5 38x100	R6 38x100
Joist	J1 35x98	J2 34x99	J3 33x100	J4 34x94	J5 33x100	J6 38x100

It is recommended that if the existing timbers are retained, the charring and melted roof felt should be removed from the timbers where possible by suitably trained, qualified and equipped personnel. As well as creating a stronger structural connection, this will minimise any potential effects of soot leaching through any adjacent materials and loose particles in the air that can affect persons with asthma.

It is understood that the roof tiles and battens will be removed in order to replace the roof felt; the battens were not tested but will presumably be renewed at the point of reinstating the roof.

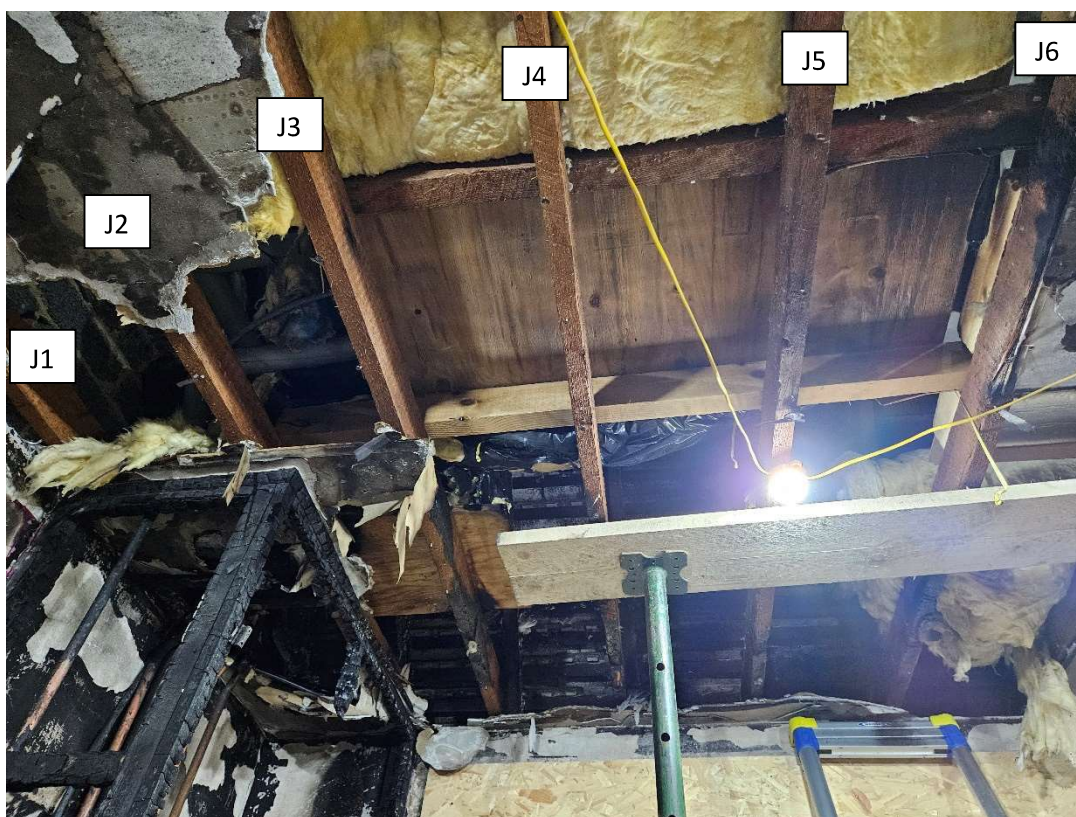
I trust this is of assistance but let me know if you have any further queries,

Yours sincerely,



Andrew Elliott MCIAT, C.Build E MCABE, IHBC, AssocRICS

For and on behalf of R Elliott Associates Ltd.



Joist 1 / Rafter 1



Joist 2 / Rafter 2



Joist 3 / Rafter 3



Joist 4 / Rafter 4



Joist 5 / Rafter 5



Joist 6 / Rafter 6

