

14th November 2023

Our Ref: B1408/NF/MNJ/REV A

Issued via email to:



Dear Mr Matthew Bullock,

RE: Structural Survey of Timber Conservatory, Sheepcombe House, Tockington, Bristol, BS32 4NZ

We were appointed by our client Andrew Bullock to undertake a structural inspection of a timber conservatory located to the western elevation of the main property. The inspection was instructed due to structural concerns having been raised in regards to the timber elements which form the main frame for the conservatory. This report will outline any issues or defects noted as well as recommendations for the work required to rectify any issues.

Our findings are restricted to structural matters only and we would state that we have not examined parts of the building that were covered, unexposed or inaccessible and are therefore unable to state that any such component is free from defect. The inspection included the conservatory only and no other areas of the property were assessed. Please see **Appendix A** which will be used for giving directions within this report.

This report shall be for the confidential use of our client, and the report shall not be reproduced in whole or in part, or relied upon by a third party without the express written authorisation of Vale Consultancy.

Description

The main structure of the conservatory (see photograph 1) is formed in timber with purlins spanning side to side which support the glass roof (see photograph 2). A timber header beam runs along the top perimeter of the glazed western and southern side which is supported on intermediate timber posts (see photograph 3). The glazed sides are formed with a number of window panels encased in timber frames. Internally there is a central post which is likely a timber encased steel member and this supports the timber purlins spanning side to side (see photograph 4). The western elevation is constructed directly on top of a stonework dwarf wall (see photograph 5). The eastern side abuts the main house and a large stonework wall encases the northern side of the conservatory. There is small hot tub inside the conservatory.

The property was granted Grade II listing in December of 1984 however the conservatory was constructed prior to this and was completed mid-1984.

Observations and Assessment

Rotting timber was present throughout the conservatory and was most obvious around the base of the timber frame supporting the glazed elevations. The base of the timber posts which supports the timber header showed signs of serious deterioration on both the internal and external zone which has been caused by damp, water ingress and lack of maintenance over time (see photographs 6-9). The base of the timber frames were rotting with some sections of frame almost completely eroded (see photograph 10 and 11). The timber members are built directly on top of the dwarf stonework wall which has no protective barrier between the wall and the timber causing damp and condensation to accumulate.

Water staining was present on the timber purlins indicating water ingress was present which will slowly deteriorate the structural integrity of the members over time. Stress cracks were present in each of the purlins however it cannot be confirmed at the time of the survey if these are historic or have formed in more recent years. Other areas of water ingress were present along the wall of the main property where the glass roof

abuts (see photograph 12 and 13). Stained and flaking plaster showed large areas where water ingress and damp has penetrated.

The glass roof was leaking with areas of water noted internally. There were also panels of glass which had cracked which could indicate minor movement in the support purlins.

Externally differing stains on the timbers indicated the protective finish to the timber work had almost entirely eroded (see photograph 14) meaning no suitable protective layer is protecting the timbers from weathering.

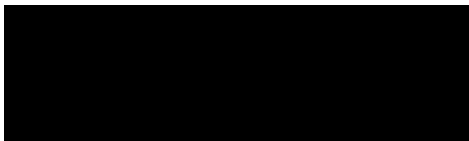
Conclusion and Recommendations

It is in our professional opinion that the main structural timber frame forming the conservatory has such deterioration that large areas of timberwork would need to be removed and replaced. Almost all of the timber posts supporting the glazed elevations show substantial erosion at their base causing their structural integrity to be hampered. The bottom sill of the timber window frames would also need to be completely removed and replaced. No major areas of decay could be found towards the top of the windows however water ingress was present in these areas which will eventually cause decay.

The rear wall of the house which supports one side of the roof showed signs of water ingress across its length indicating the lead flashing has failed. Continuous damp penetration across this wall could cause degradation of the mortar between the stonework eventually leading to the structural integrity of the wall being affected.

It is our professional opinion that due to the amount of rot present in the timbers the existing structure has come to the end of its lifespan. Assessing the amount of timber work which needs to be fully replaced it would be more financially viable to take down the existing timber structure and replace with a new structure formed in a material such as steelwork which will have a longer lifespan and will not be subject to the same forms of deterioration noted. This conclusion has been formed due to the amount of rotten timber present which is mainly located at the base of the frame meaning the removal and reinstating of new timbers would be complex and difficult to undertake without removing the whole glazed panel. The roof is also in need of a full replacement with areas of cracked glass, water leaking and the lead flashing having failed. We would recommend that this is replaced with a more environmentally and economically friendly design such as timber joists with suitable levels of insulation.

If you have any queries regarding this report, please do not hesitate to contact our office at the above address.



Nicole Freegard MEng (Hons)
Vale Consultancy

Enclosed:
Photographs 1-14
Appendix A



Photograph 1 – Conservatory to be surveyed



Photograph 2 – Support purlins



Photograph 3 – Timber posts between frames



Photograph 4 – Purlins supported on post



Photograph 5 – Dwarf wall



Photograph 6 – Rotten timber at bottom of post



Photograph 7 – Rotten timber at bottom of post



Photograph 8 – Rotten timber at bottom of post



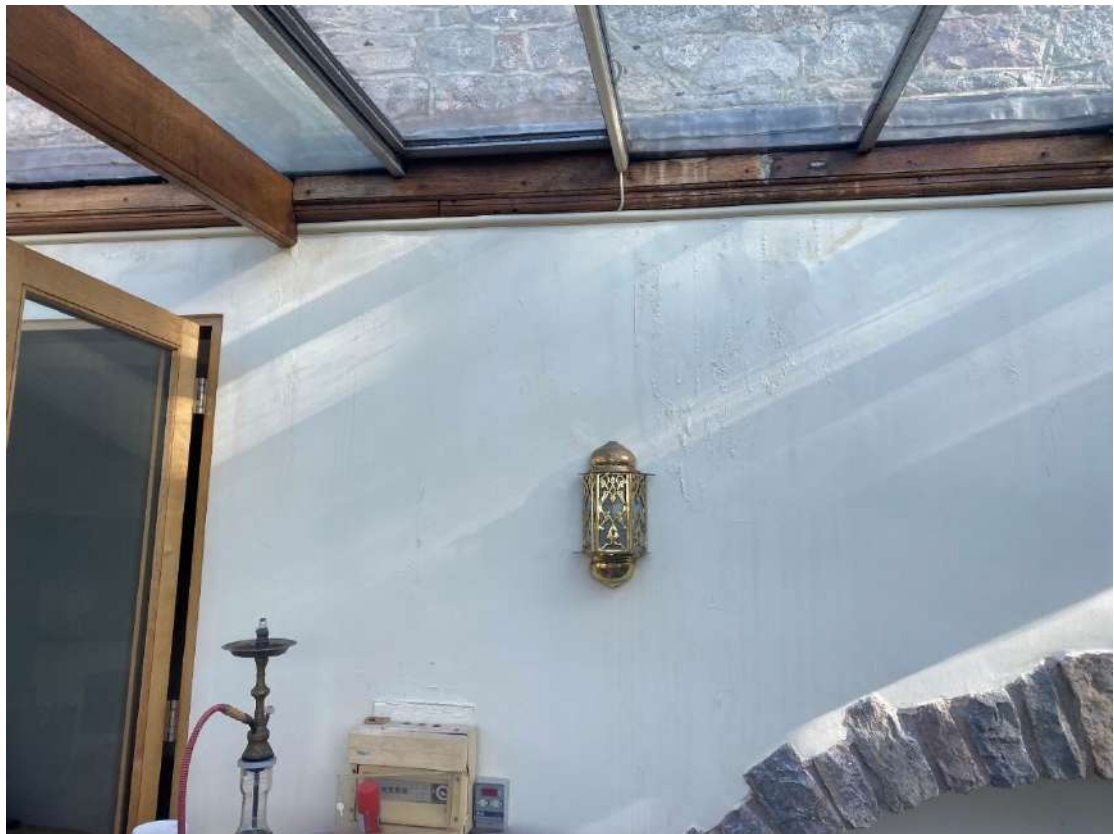
Photograph 9 – Rotten timber at bottom of post



Photograph 10 – Rotten timber at base of frame



Photograph 11 – Rotten timbers and signs of water ingress



Photograph 12 – Signs of damp present



Photograph 13 – Signs of damp present

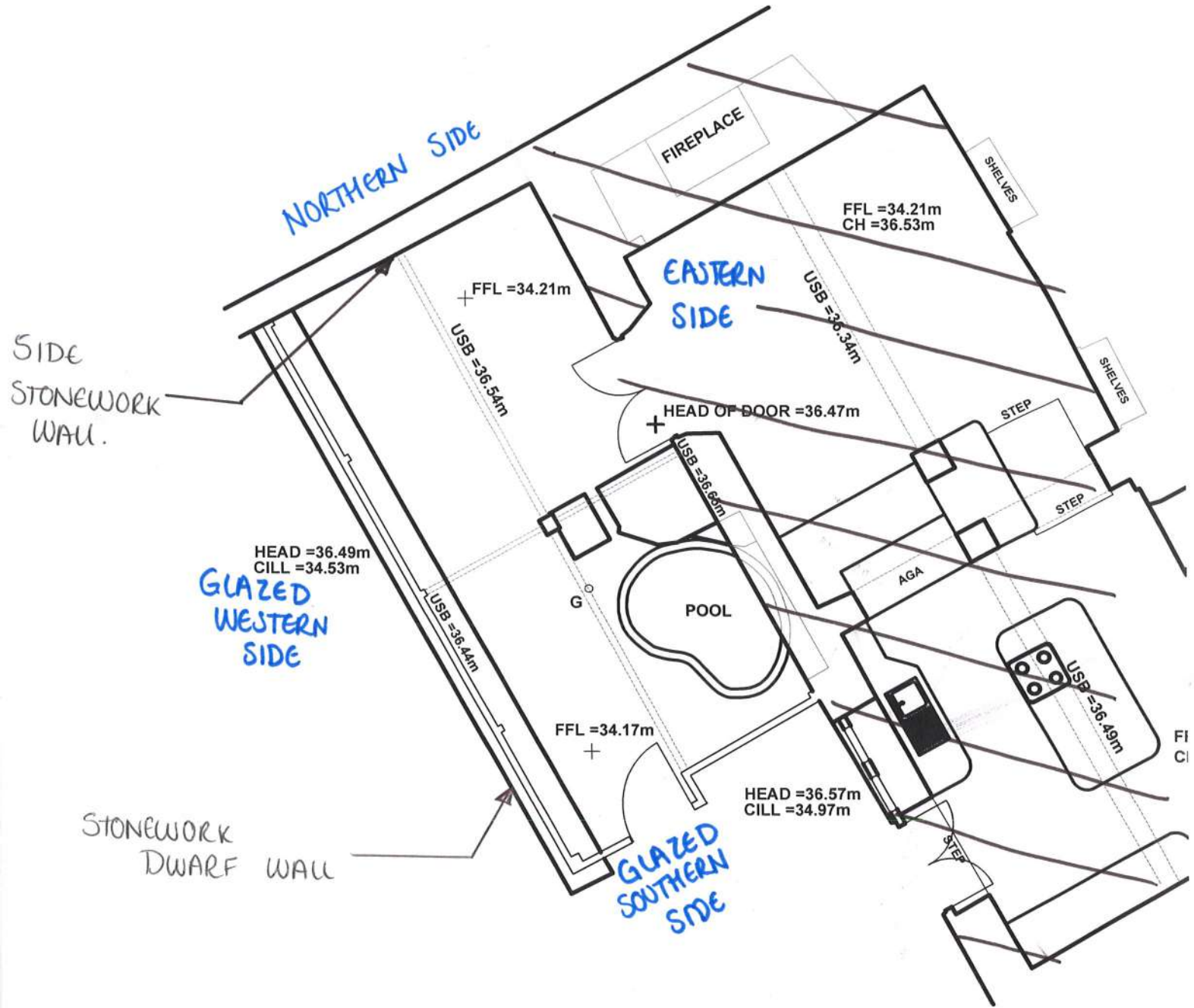


Photograph 14 – Discoloration in timber shows protective layer diminished

APPENDIX A

GROUND FLOOR PLAN

NOT TO SCALE



 **MAIN HOUSE**