

Random Forge

Structural inspection and report

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Introduction

Background

This report has been prepared to summarise the findings from visual inspections of the existing structure of a 3 storey load bearing stone, residential building in South Wraxall known as Random Forge.

Richard Heath, director of Momentum Consulting Engineers attended site on Monday 2nd March 2026 to carry out visual inspections of the building.

Existing site

Random Forge, 57 Upper South Wraxall is located on the northern side of South Wraxall.



Random Forge

Existing structure

Random Forge dates back to the mid 17th century and was originally a blacksmiths forge and workshop

The existing structure is load bearing stone supporting timber floors and a pitched timber roof with stone tiles.

The external walls have been rendered in a hard cement based render and where this has been removed or come away it shows the stone to be of varying size and quality, possibly giving the building its "random" name.

Limitations of report

The inspection and associated report reviewed just the condition of the structure.

We did not carry out any specific material testing or any analysis of the structure.



Observations

Excessive damp and moisture

There is excessive damp and moisture within the external walls and internal floors.



Excessive damp on internal walls

Damp and moisture is trapped within the stone structure to the extent it has saturated the stone right through with excessive damp on the internal surfaces.

Floor structures

The existing timber floor structures appear to be in a reasonable condition with no signs of excessive deflections, however the very low floor to ceiling heights, requirements to add insulation, the need to re-wire and re-service the house and the likely repairs to rotten joists means that the floors will need to be replaced.

Wall structures

The external random stone wall is rendered in hard sand cement mortar with what appears to be a minor pebble dash.

There are cracks in the render which appear to coincide with the location of excessive damp on the internal surfaces.

It is noted that moisture trapped in the wall is sufficient for plant growth within the wall.



Cracks in the external render with plant growth

Where the render has been locally removed for inspection of the stone, it was noted that the mortar was easily removed without tools and was easily hollowed out.

Close inspection of the wall shows that many of the stones have fractured and there are no facing stones within the wall.

There composition through the wall is assumed to be random stone throughout rather than internally faced with bricks or facing stone.



Section of wall with render removed to expose random stone



Discussion

Condition of structure

The excessive moisture within the fabric, trapped by the cement based render is causing damage to the internal surfaces and to the structure.

The random stone used within the walls appears to absorb moisture readily and the lack of facing stones exacerbates the ingress (facing stones tend to allow water to run off the stone, whereas random stones can inadvertently channel water into the wall as pointing mortar flush with the stone is difficult). The fractured stones are most likely to have been caused by the water, trapped in the fabric, freezing and expanding in the winter months. The small sample that was opened up showed several fractured stones.

Good conservation practice of existing stone buildings that have been inappropriately rendered is to remove the render. This will then allow the wall to manage moisture properly by having a large surface area to dry out, preventing it getting trapped and damaging the fabric and internal finishes.

Removal of the existing cement render will also end up removing a lot of the softer mortar, some faces to the stones and any loose stone in the areas with fractures. It is therefore likely that many areas will need to be repaired involving local rebuilding of the wall.

We also understand that in order to re-organise the internal layouts changes are required to the window openings both in terms of height and level. Ordinarily this work could be carried out with local propping of the structure, however due to the extent of fabric that is likely to be rebuilt, the and the questionable condition of the stonework, a safer method would be to take down the wall, retain the existing stones that are re-usable and re-construct the wall using these stones. This would allow the wall to refaced properly and constructed so that water does not end up trapped in the stonework.



Example of fractured stone most likely caused by expansion of water trapped in the fabric



Recommendations

Conclusion

Due to the damage caused by the excessive long term moisture in the wall that has caused fracturing of stone from expansion of water during freezing periods, any alterations and repair works will likely require substantial re-building of the walls.

As the work will also require the re-positioning of windows and door openings, we would recommend that the best long term solution and additionally the safest method would be to rebuild the walls using any of the existing stone that has a good facing and has not been damaged.