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28th April 2021

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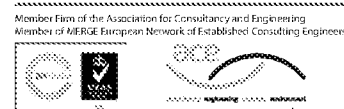
Dear Victoria

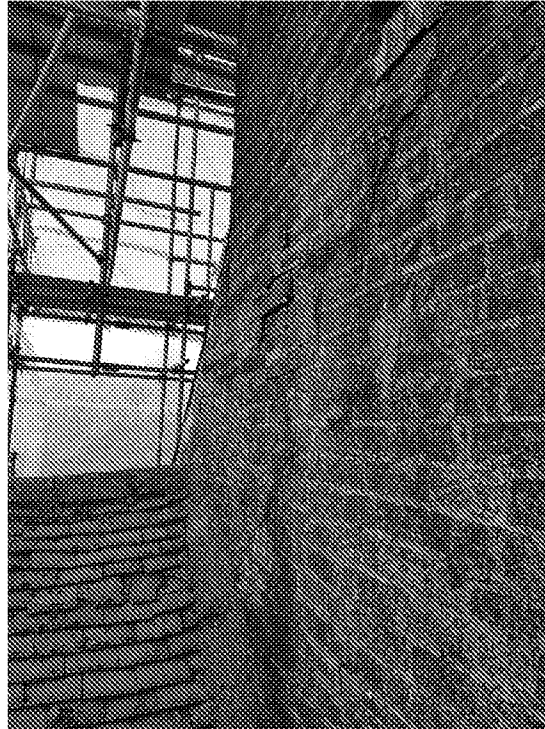
MALTRAVERS STREET, ARUNDEL, WEST SUSSEX, BN18 9QB - CHIMNEY INSPECTION

As requested, an inspection of the existing brickwork chimney on the southern elevation of the above property was undertaken on Monday 19th April 2021. The inspection was carried in response to concerns that had been raised as to the integrity of the existing brickwork and ongoing stability of the chimney itself. The building had been scaffolded, enabling access to be gained to the area around the chimney and gable wall at roof level.

The chimney is constructed in standard format clay bricks laid in stretcher bond and bedded in what appears to be lime mortar. It extends to around 3.6m above parapet level and measures approximately 560mm x 1240mm in plan. There are no structural stays present and therefore the chimney acts as a vertical cantilever under lateral loading. The chimney itself is supported directly off the south-western gable wall of 61 Maltravers Street which abuts the adjacent residential property. As such it is not possible to carry out a full external inspection of the gable wall as the vast majority is concealed. Where exposed (above the level of the adjacent property's roof line), the brickwork within the gable generally appears to be in satisfactory condition with the exception of a localised area where significant movement has taken place. A number of bricks have moved outwards, resulting in cracking to the mortar jointing and the bricks themselves becoming unbonded (see Photograph 1). In one location the outer face of the brick units are projecting out approximately 30mm from the line of gable wall. The cause of the movement is not clear but the distress exhibited in the wall is of concern as it provides support to the large chimney stack above.

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Photograph 1: Gable wall beneath chimney stack

The chimney itself is leaning outwards towards the south-west and some of this could be attributed to weathering. However, there is evidence of historic remedial works including the introduction of steel rods within the jointing on the south-west side of the chimney and a metal packer, also within the jointing, at the southern most corner of the chimney (see Photograph 2). The latter has resulted in a slight reduction in the lean but has also compromised the structural integrity of the chimney as the upper brickwork is no longer bonded to the lower brickwork in this area. The chimney exhibits lateral movement when pressure is applied which is not unusual for a stack of this height but the deterioration of the horizontal jointing is also cause for concern. Telecommunication cables are attached to the brickwork and two different cables bands are located just above parapet level.



Photograph 2: Packer in chimney joint

It is not possible to carry out intrusive investigations to the defective brickwork in the gable wall due to the concerns over the short term stability of the chimney stack above. Therefore, we recommend that the stack is carefully dismantled down to parapet level and the brick units stored. The defective brickwork within the gable wall can then be investigated to establish the likely cause of movement in this area. Once the relevant investigations are completed, the necessary remedial works can be specified to reinstate the brickwork and restore the structural integrity of the wall in order that the chimney stack can be re-constructed using the salvaged bricks.

We understand that the use of lime mortar is preferred and have based the structural design of the chimney stack based on half brick thick chimney walls constructed in designation (iii) sand cement mortar and hydraulic lime pointing. The calculations conclude that an optimum stack height of 1950mm above parapet level can be achieved without the need for additional horizontal restraint or the introduction of significant new structure within the chimney itself. This is on the basis that the plan size of the new chimney stack remains the same size as the existing.

I hope that the above provides you with enough information to move things forward. If you require anything further please let me know.

Yours sincerely



ALEX FORBES

For and on behalf of **CAMPBELL REITH HILL LLP**