

8a Friday Street
Henley on Thames, Oxfordshire RG9 1AH

Tel: 01491 414191
www.oxleyconservation.co.uk

16th July 2020

Julia Hess
Manor Farm House
Nether Winchendon
Aylesbury
Buckinghamshire
HP18 0EA

**CHIMNEY STACK
EAST GABLE SOUTH RANGE
MANOR FARM HOUSE, NETHER WINCHENDON**

Dear Julia

Further to my site visits to investigate the structural movement and how best to remedy the problems identified please find below an overview of the issues relating to the chimney stack to the east gable.

The following reflects the findings of a collaborative structural review carried out on the 17th June 2020 with Richard Swift [SFK Consulting Engineers], Paul Turnham [Ward & Co] and myself and in subsequent discussions.

INTRODUCTION

Manor Farm House is a Grade II* listed building of timber-framed origins. It has been much altered over the centuries and subject to extensive modernisation over the last 20 years or so, including a single storey "conservatory" style extension constructed in 2011/2012 to the east of the south range [Figs 1 & 2].

The chimney stack in question is an external brick stack to the east gable of the south range. The stack is plain and slender, having the appearance of being late Victorian/Edwardian in origin.

The stack is considered to be of low architectural or historic significance compared to the many features of high significance at Manor Farm House, including the three larger and more impressive stacks detailed in the list description [Appendix 1].

OBSERVATIONS

1. Cracking is evident to the lining to the base of the chimney within the kitchen and conservatory [Fig 3].
2. The chimney stack projects above the roof of the single storey conservatory extension as a slender brick shaft fitted with two flue cowls, one of which serves the boiler located in the basement [Fig 2].
3. The brick shaft leans slightly to the south, which reflects a combination of prevailing wind and rain, the crystallisation of salts and the lack of restraint and physical connection with the gable [refer to 6 below].
4. There is evidence of historic contaminants of the by-products of combustion leaching through the bricks and mortar that has weakened the mortar].

5. Cracking to the south face of the brick reflects movement and associated stresses that the stack is subjected to [Fig 4].
6. The stack is sparingly toothed into the infill panels of the east gable of the south range [Fig 6]. The movement of the stack has resulted in the rotation of brickwork in the infill panels [Fig 7].
7. The movement of the stack has contributed to the disturbance of the internal finishes and the weathering between the east gable and the connecting central range/wing.
8. The collaborative structural review identified several factors that have contributed to the movement suffered by the building around the east gable of the south range and the east elevation of the central range. These included:
 - 8.1. The building is constructed on shrinkable clay soils prone to shrinkage and expansion dependent upon the amount of water present.
 - 8.2. There is a basement below the east end of the south range. If the foundations of the stack extend to the depth of the basement this would mean that they are below the zone of influence of moisture changes in the soil. However, the chimney stack was constructed long after the basement and, it is therefore anticipated, that it does not sit directly above or on the walls of the basement. Consequently, it is most likely that the stack is not as deeply founded as the basement wall. It is not known how adequately the stack is supported and the proximity of the basement would make it be difficult to underpin or create improved support to the stack with confidence.
 - 8.3. The condition and efficacy of the rainwater drainage. A survey of the rainwater drains has been carried out, the detailed results are not known at the time of writing this report but it is understood that repairs and improved detailing are needed to improve the performance of the drains. The failure of rainwater drainage will increase the levels of expansion and contraction suffered by the soil, which will contribute to the continued structural movement of the stack.
 - 8.4. The presence of plants immediately adjacent to the building will have an influence on the rate of shrinkage of the clay soils, and therefore movement. The plants will have, most likely, contributed to any failure in the drainage system.
 - 8.5. The lack of restraint to the stack afforded by the timber frame of the first floor gable and the open nature of the east gable at ground floor level will have contributed to the outward leaning movement of the stack. As a result the tall slender chimney stack will be vulnerable to strong winds and any movement in the timber-framed gable.
 - 8.6. The whole of the timber frame to the east gable is poorly restrained by the timber frame to the south elevation and the corresponding timber frames adjacent to the north corner post of the gable, primarily as a result of alterations and/or the decay to joints of the timber frames.
 - 8.7. Alterations to the building, in particular the construction of the conservatory extension, will have had an effect on the soil conditions and therefore the chimney stack. The ground below the extension will have dried out more than the exposed surrounding ground, where there are no problems caused by defective rainwater drainage. Any difference in the ground conditions below the stack and the remainder of the building will result in differential movement patterns; which are reflected in the visible symptoms.
 - 8.8. Any movement to the unrestrained and deteriorating chimney stack will highlight the inherent weaknesses in the timber frame and single skin [4 inch/100mm thick] infill panels and make the east gable more susceptible to ongoing disturbance.

OPTIONS AVAILABLE

- A. Retain the stack and carry out basic repairs:
The stack will be prone to continued movement and the single skin brick infill panels of the east gable will be subjected to the risks of continued disturbance.
- B. Dismantling and rebuilding the stack:
This would require deep foundations to significantly reduce the risk of further movement. The basement is adjacent to the stack and any deep foundations at this point could disturb the walls of the basement.
- C. Dismantle and remove the stack:
This would remove the stack as a negative influence on the east gable.

CONCLUSION

The poor and deteriorating condition of the brick stack and the continued risk of movement warrants a long-term solution.

The dismantling and rebuilding of the stack, including deep foundations, will, most likely, be disruptive to the stone walls of the basement. Implementing basic repairs would only defer the inevitable, as the mortar is deteriorating and the stack will continue to be subject to movement and contribute to further damage to the east gable.

Consequently, in these particular circumstances, there is validity in the removal of the stack down to ground floor level to eliminate the continued deterioration and risk of damage from seasonal movement.

The proposed extension works would facilitate the removal of the stack and allow improved weathering detailing to be provided.

It is important that a solution be devised for the flue to the boiler to be fully functional before the stack be removed.

LIMITATIONS

All statements and expressions of opinion contained in the Report are provided on the strict understanding that they are only for the benefit of the named client(s), their professional advisors and, where appropriate, representatives of the local planning authority and/or Historic England. Oxley Conservation accepts no liability in contract or tort to any person other than the client.

If you require any further information or assistance with regard developing this Report please do not hesitate to contact me.

Richard Oxley BSc DipBldgCons MRICS IHBC

RICS Certified Historic Building Professional

16th July 2020

SELECTED PHOTOGRAPHS



Fig 1 [left]: View of the east elevation



Fig 2 [right]: Detail of the brick stack to the east gable of the south range

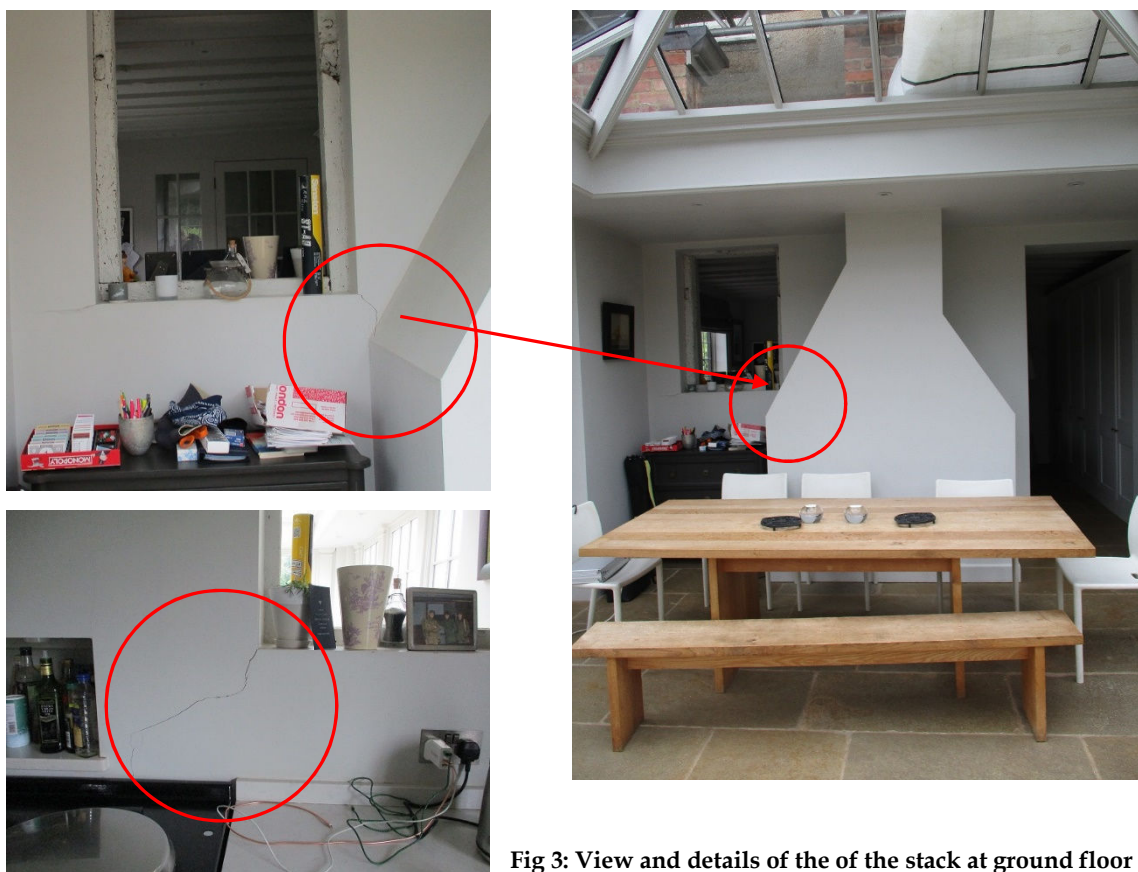


Fig 3: View and details of the of the stack at ground floor level

The stack within in the conservatory extension is fully lined with modern [plasterboard?] boarding.

Top left: Detail of cracking to lining to the east face.

Top right: View of the chimney stack at ground floor level contained within the conservatory extension.

Lower left: Detail of cracking to the west face [the “mirror” image of the location of the cracking to the east face.



Fig 4: Detail of south elevation of the stack

Note the vertical cracking and deterioration of mortar, which is more pronounced at higher level



Fig 5: View of upper part of the stack from the north

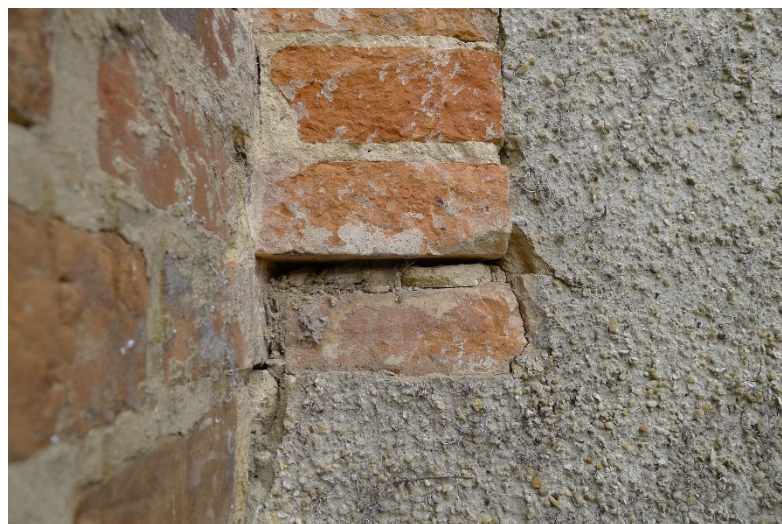


Fig 6: Detail north of stack - tothing detail with gable

Fig 7: Detail of brick infill panel

Note rotation/lifting of brick

APPENDIX 1: LIST DESCRIPTION

List description taken from the Historic England website

<https://historicengland.org.uk/listing/the-list/list-entry/1159881>

MANOR FARMHOUSE

Overview

Heritage Category:

Listed Building

Grade:

II*

List Entry Number:

1159881

Date first listed:

25-Oct-1985

Statutory Address:

MANOR FARMHOUSE, LOWER WINCHENDON

Map

Location

Statutory Address:

MANOR FARMHOUSE, LOWER WINCHENDON

The building or site itself may lie within the boundary of more than one authority.

County:

Buckinghamshire

District:

Aylesbury Vale (District Authority)

Parish:

Nether Winchendon

National Grid Reference:

SP 73209 12246

Details

SP 71 SW LOWER WINCHENDON LOWER WINCHENDON (north side)

2/342 Manor Farmhouse

25.10.85 GV II*

Large house. C16 and C17. Timber framed, exposed with brick infill on south range, remainder re-clad and partially replaced by later C17 brickwork. North elevation of south range brick dressed rubblestone. Rubble plinthes. Old tile roofs. All windows leaded. 2 storeys plus attic. Basement under south range. Letter-Z plan with north wing projecting to the east and south wing towards west. South wing. At right basement window has moulded brick mullions. Irregular casements. Attic has 3 tile-hung gables. North elevation of 3 bays, last bay exposed framing and board door. 2 rubblestone bays. Old diamond- leaded glass in first floor right hand window. East gable elevation roughcast. Early C17 west gable stack with rubble lower part, brick upper and diamond shafts flanking a square one. Main block. West elevation brick with massive projecting stack occupying 1½ bays out of 5. Rubblestone lower part brick upper with offset and 3 diamond shafts. 6 panel door in third bay. Single light transomed casements flank stack. Then 2 bays of cross casements, left bay blank windows. Band course. Moulded eaves cornice. 2-light hipped dormer. Brick east elevation with 2 cross-casements to ground floor and 6 panel door in third bay at right. First floor casements. Attic has right hand gable with roughcast infill to timber frame. North wing has on south elevation right hand french doors. 2 bays, first floor left hand casement, right hand render panel replaces window. East gable has large early C17 stack, rubble lower part, brick upper, with one diamond and one square shaft. North front of 5 bays of cross- casements, band course and box eaves. In angle of main block and north wing is oak door dated '1620'. Interior. Two ground floor rooms have late C17 panelling with box cornices and window shutters. Much timber framing exposed. Some old batten doors. Chamfered and stopped spine and cross beams. RCHM I. 248. MON.12.

Listing NGR: SP7320712243

Legacy

The contents of this record have been generated from a legacy data system.

Legacy System number:

43283

Legacy System:

LBS

Sources**Other**

An Inventory of the Historical Monuments in Buckinghamshire Volume One South, (1912)

Legal

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

End of official listing