22nd June 2023
Job No: 10086TUT6
(Updated 14th December 2023)

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Wolesley House
79 High Street
Market Lavington
Wiltshire

Structural Condition Report
(Re-inspection 30th May 2023)



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Wolseley House, 79 High Street, Market Lavington, Wiltshire

Structural Condition Report on Detached Residential Property – 79 High Street, Market Lavington

Purpose of the Report

Structural Solutions was commissioned to carry out an updated investigation into the structural condition of the detached property following an original inspection in March 2021 and consider the practicalities and feasibility of carrying out repairs to the property. Following feedback from 'The Conservation Team' and Historic England on the Planning proposals, this report has been updated to answer the structural questions raised.

Introduction

The building is two storey but with rooms in the attic roof space and a partial cellar below the front of the property. To the rear of the property, there is a single storey extension into which the Kitchen extends from the main house construction. We believe this part of the property was constructed in the more recent past. To the side, there is a single storey garage connected to the gable wall. The garage was not inspected during this visit. The property is set back from the road and on a slightly elevated position behind a random stone boundary wall. The front elevation faces approximately south east.

Investigation

Our investigation is based on a visual walk over only and no testing of the materials has been carried out.

Cellar

The cellar footprint is smaller than that of the ground floor and located below the right hand side of the property when view from outside. It is reasonably dry although there are areas of reconstructed masonry using concrete blocks and brickwork. Consequently, we could not see the condition of the existing wall. Other areas still remain as existing, i.e. random stone. Due to some 'failures of the suspended timber ground floor beams, additional brickwork piers have been constructed to provide intermediate supports. The floor is a mixture of concrete, where the later concrete block walls have been constructed and brick in the 'original' areas. There is a small window to the front of the property, possibly an access for coal and/or wood used to heat the building in the past.

No signs of degradation of the cellar structure was observed.

Following further investigation, we believe that the work to the cellar also included underpinning the front wall of the property to the right hand side of the entrance door when view from outside.

Ground Floor

The external walls to the ground floor appear to be a mix of construction. Externally, they are painted brickwork but internally, where areas of lining boards have been partially removed, the walls are a mixture of chalk stone to the front elevation and timber frame with infill panels to the side walls. The front wall to the left of the main entrance door when viewed from outside in particular has moved outwards where the wall meets the first floor above and down. The combined movement could be the result of subsidence and rotation of the foundation acting together with a lack of connection to the first floor. There is a significant crack parallel to the front wall in the ceiling, which would further indicate lateral movement.

Since our inspection in March 2021, there does appear to have been further outward movement of the front wall of the property, particularly at first floor level which will become dangerous if nothing is done to prevent further movement. Having carried out further investigation, the deterioration of the footing and the wall is, we believe because of rainwater off the roof being discharged onto the wall close to the ground. This water has been washing out the fines in the subsoil below the shallow foundations and also running through the stone plinth causing the extremely friable chalk that makes up the wall to disintegrate.

Construction of the internal walls is a mixture of brick and timber frame with 'wattle and daub' infill. There has been some significant subsidence of the internal wall to the side of the staircase that accesses the upper floors. This is evident from the angle of the staircase treads and first floor above. This wall also extends down into the cellar. To the rear of the property both internal and external walls shown signs of damp towards the base although this did not extend into the single storey extension to the rear of the property. Ceilings of the rear extension show signs of water penetration through the roof particularly near the rooflight.

There appears to be continued degradation of the internal ground floor structure since our last inspection.

First Floor

First floor construction consists of timber joists supported by external and internal walls together with isolated timber beams effectively reducing the spans of the floor joists. To the front of the property, the wall has moved outward compared to the floors, as noted above, and this has compromised the connection between floor joist and wall resulting in localised failure of the bearings where the length has reduced causing additional vertical movement. This vertical movement is compounded by the subsidence of the wall lower down. The floors supported by the internal wall to the side of the staircase have also moved downward with the wall itself causing a two-way settlement in some areas. To the rear of the property, the same level of movement of the floors is not seen.

Some sections of the external wall have been exposed which shows similar construction to the ground floor, i.e. combination of masonry, brick and chalk stone and timber frame

panels. Further areas of wall have been exposed since our previous inspection which also shows continuing deterioration of both the chalk stone particularly and the timber structure.

Second Floor

The second floor is accessed via a separate staircase from the first floor, separate to that from ground floor. The accommodation is within the roof space to the front section of the property only and has timber floors throughout. There is further evidence of the subsidence of the internal wall and outward movement of the front external wall as floors 'slope' towards the front of the property.

Roof

The roof structure is visible internally above the front section of the property only from the second floor and has been constructed with a series of primary timber trusses supporting purlins and loose rafters. The trusses are supported front and rear by the external walls of the main building. The front wall, as noted elsewhere has moved downward and outward causing the trusses to 'slope' towards the front of the property.

The structural timber, particularly of the trusses and purlins has suffered decay over the years. This decay has significantly reduced the section size in a number of cases which has led to some localised failures. In these particularly cases, rudimentary repairs and remedial works have been carried out to stem further movement.

Upon further inspection, we believe that significant remedial works to the existing roof structure will be required. Due to the amount of decay in the timber, remedial works will need to include replacement of parts of the primary and secondary structure and reconstruction of the truss joints. Where timber is 'sound' this can be kept and incorporated into the repairs.

Exterior

As stated previously, the exteriors walls of the property are painted brickwork but we believe that this is a later addition to the existing property and conceals the original construction. To the south west gable elevation, internally, the wall construction has been exposed and consists of a brick outer skin and inner skin comprised of a timber 'truss/frame' with infill brick panels. The cavity is particularly wide, circa 300mm and the two leaves separate without lateral connection.

To the front elevation, a further additional masonry plinth has been constructed and painted black. Whether this was possibly to provide a barrier against damp, it is unclear. What is significant are the strap/ties that have been installed and exposed externally, presumably to try to arrest the outward movement of the front wall of the property. There are four of these ties, two either side of the front entrance door. However, they are not in evidence on the rear wall of the property and thus it would appear that they do not extend that far and must terminate somewhere internally. Because they do not extend to the rear elevation, their effect on restraining the front wall against outward movement is minimal if

anything. Indeed, there is a significant bow in the front wall of the building at first floor level as described above which we believe to be ongoing.

The rear and gable walls of the property appear to be sound and do not show the same level of both vertical and horizontal movement as the front wall.

Discussion

As was seen in 2021 when our original inspection was carried out, the property has suffered primarily from subsidence of the front wall and internal load bearing walls that also extend into the cellar. This has caused, we believe, outward movement of the front wall, possibly as a result of rotation of the shallow foundation but also lack of fixity between the first floor and roof structure and the external wall. Floors have moved as a result as has the roof structure of the main part of the property. Bearings of the first floor joists on to the front wall in particular have been compromised and what we believe is continuing outward movement of the front wall, is liable to cause a partial uncontrolled collapse. The construction of the external walls of the property when view from the inside are poor. The chalk walls to the front have deteriorated as has the main timber frame that form the gable walls.

The rear part of the property has not suffered in the same way as the front. There are little signs of movement although there is evidence of damp penetration. The condition of the main walls could not be seen due to plaster on the inside face and brickwork 'skin' to the exterior.

Conclusion

When we first were asked to carry out an inspection of the existing property in 2021, our brief was to determine the practicality and feasibility of refurbishment of the property. Because of the subsidence of the cellar, the poor quality of the external wall construction and condition of the roof structure, our recommendation was to consider demolishing the property and rebuilding with new foundations, with or without a reconstructed cellar. If this was not acceptable, refurbishment of the property would have to consider the subsidence of the load bearing walls by underpinning, strengthening of the floors and tying to the front wall and repairs of the roof structure.

However, as the subsidence and outward movement of the front wall of the property has continued over the two plus years since we first inspected the building, taken on board the views from 'The Conservation Team' and Historic England and having discussed the options extensively with the Architect and Contractor involved, our advice has changed to demolish the worse section of the front wall to the left of the entrance door and rebuild. To achieve this with Health and Safety a top priority, the floors and roof would need to be propped along with temporary propping of the adjacent walls whilst protecting the building from water ingress as much as possible. Once stabilised, the section of wall in question would be carefully taken down setting aside any reusable bricks for reuse on in the construction of the wall. Similarly, any 'sound' stone within the lower part of the wall would be set aside for

reuse. Disintegrated chalk would have to be discarded. New mass concrete foundations would be constructed down to a suitable bearing stratum off which the reconstructed wall could be built. The wall would integrate new and reclaimed stone and brick into the construction. We would recommend that the wall be reconstructed as a cavity wall incorporating cavity ties but tied into the existing walls at each end. It is further recommended to incorporate movement joints to deal with potential differential settlement between new and existing foundations. Floor joists would be built into the reconstructed wall to provide lateral restraint and a new wall plate to support the roof structure.



Significant repair and remedial works will be required to the roof structure but this can be dealt with once the front wall has been reconstructed.

Although the proposal detailed above indicates partial demolition and reconstruction, we believe that this is the minimum required in order to preserve the majority of the historic fabric of the building. Doing nothing is not an option as collapse of the front wall of the building is likely to occur due to the continuing deterioration of the foundations and wall above. Having taken advice from the Contractor involved with the project, repairing or underpinning the existing in the worst affected area is not a safe option as the wall could collapse during the underpinning process putting construction workers at risk.

Although in previous reports we had suggested total demolition. Taking into account the views of 'The Conservation Team' and Historic England and having consulted with the

Architect and Contractor involved in the project, we are recommending limited partial demolition and reconstruction using as much of the reclaimed materials as possible.

Appendix A - Photos



Front Elevation of Property in 2021



Front Elevation of Property in 2023 with more pronounce outward movement at first floor



Internal view of second floor and roof structure showing front wall settlement



Internal view of roof structure showing fractured timber

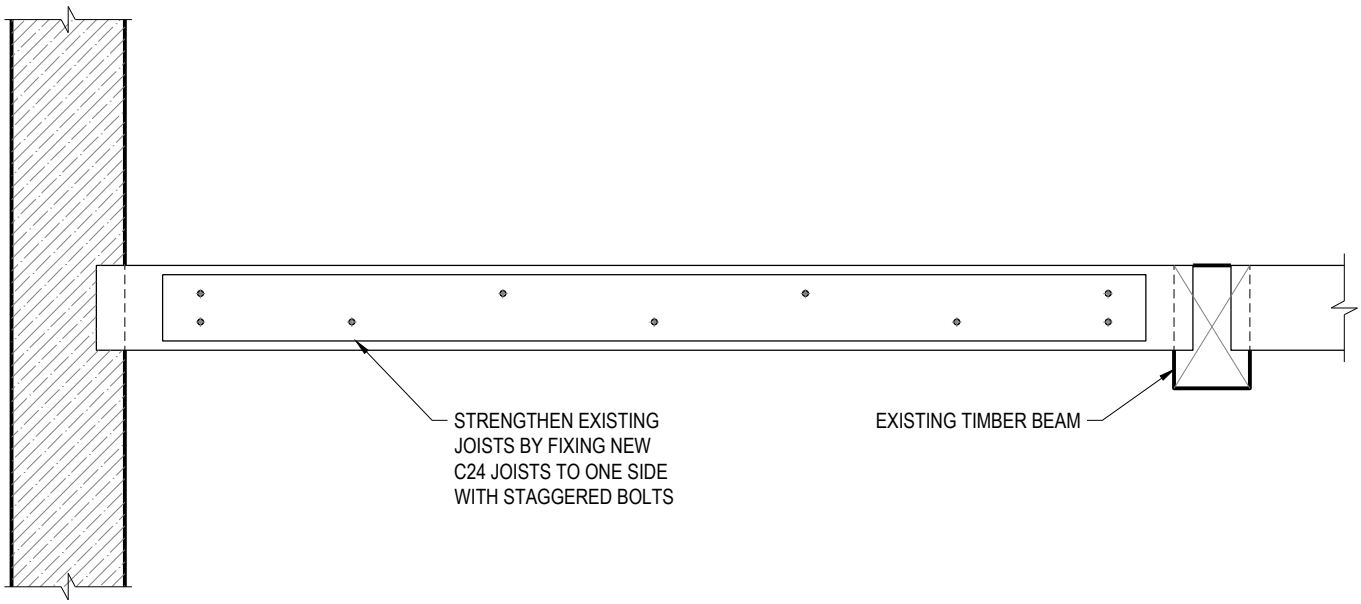


Internal view of roof structure showing fractured Principal Rafter of main truss



Underside of roof showing lateral movement of ridge relative to eaves

APPENDIX B – Remedial Proposals



REV	DATE			PROJECT			SHEET SIZE
P1	22/11/23	ABK	MM	WOLESLEY HOUSE, 79 HIGH STREET, MARKET LAVINGTON			
				TITLE: DETAIL - STRENGTHENING EXISTING TIMBER FLOORS			
				SCALE @ A4: 1:20	DATE: 22/11/23		A4
DRAWING STATUS: PRELIMINARY				PROJECT NO.: 10086TUT6	DRAWING NO.: 300	ABK / MM	REV.: P1

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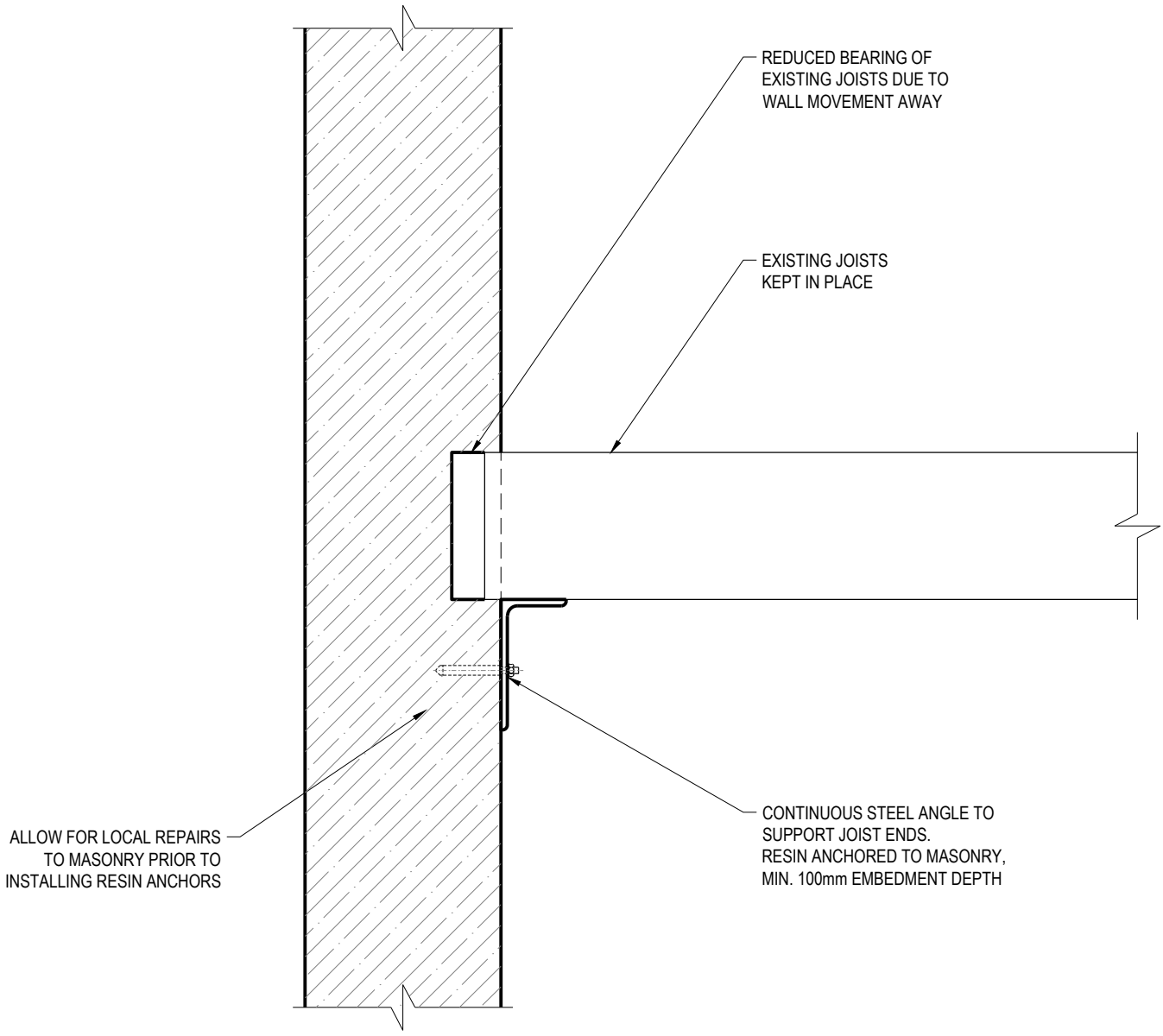

P1	22/11/23	ABK	MM	PROJECT: WOLESLEY HOUSE, 79 HIGH STREET, MARKET LAVINGTON				
				TITLE: DETAIL - REINSTATEMENT OF EXISTING JOIST BEARINGS				
REV	DATE			SCALE @ A4: 1:10	DATE: 22/11/23			SHEET SIZE: A4
DRAWING STATUS: PRELIMINARY				PROJECT NO.: 10086TUT6	DRAWING NO.: 301	ABK	MM	REV.: P1

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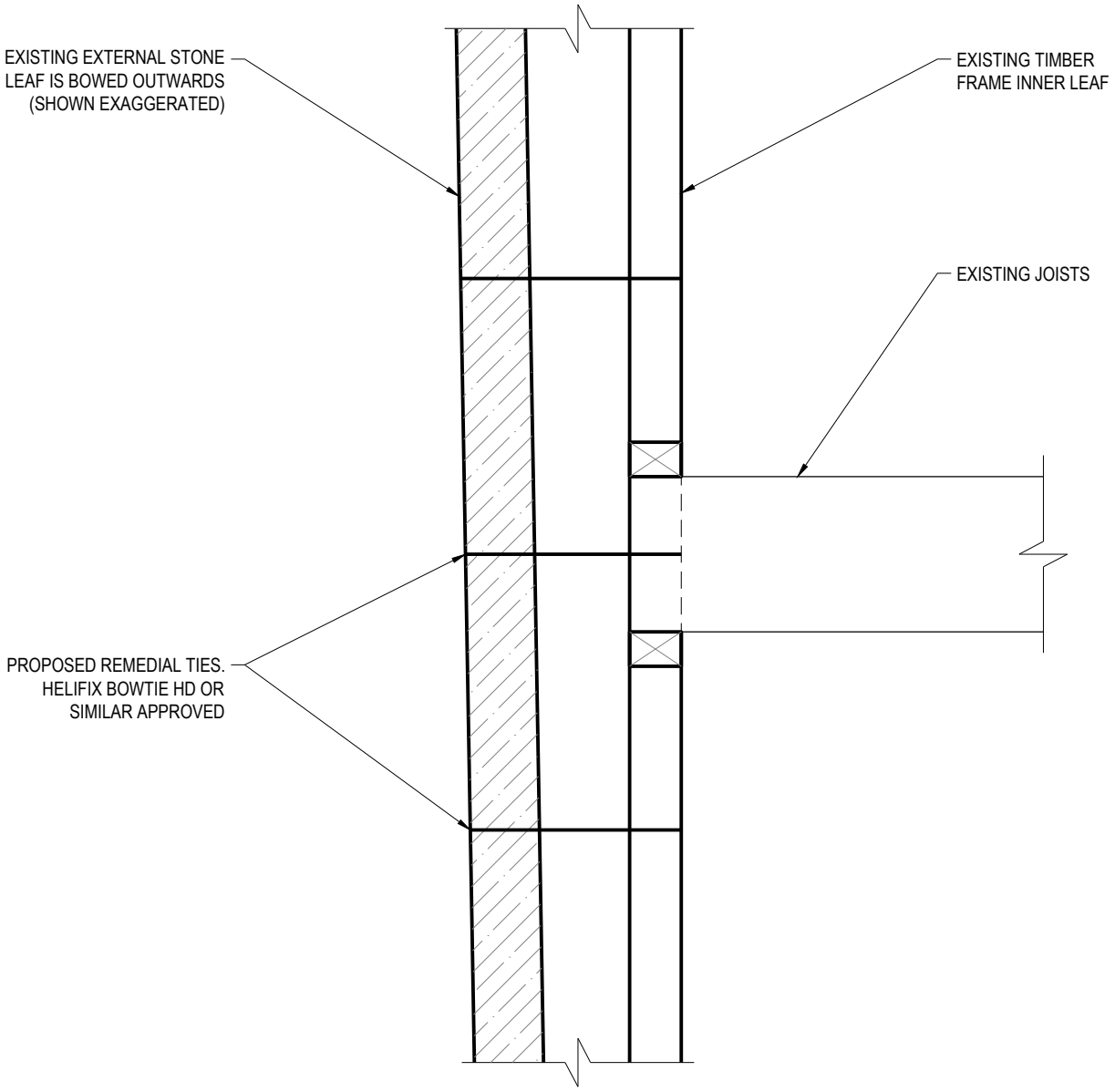

REV	DATE			PROJECT / TITLE			
P1	22/11/23	ABK	MM	WOLESLEY HOUSE, 79 HIGH STREET, MARKET LAVINGTON DETAIL - TYING INNER AND OUTER LEAVES OF ELEVATION			
REV	DATE			SCALE @ A4 1:10	DATE 22/11/23		SHEET SIZE A4
DRAWING STATUS PRELIMINARY				PROJECT NO. 10086TUT6	DRAWING NO. 302	ABK ABK	REV. P1

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