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PROJECT No	**ES347**
PROJECT TITLE	**THE OLD VICARAGE, HORTON**
CLIENT	**MR ROBERT STANLEY**

DISCIPLINE	**STRUCTURAL**
DOCUMENT TITLE	**STRUCTURAL SURVEY OF PART GROUND FLOOR INFILL EXTENSION**
AUTHOR	**KARL JERVIS**

DATE	**15th APRIL 2015**
CHECKED BY	**DOUGLAS CROFT**
DOCUMENT NUMBER	**SS01**
REVISION	**A**

REVISION	ISSUE DATE	CHANGES MADE
A		Initial Issue
B		

REPORT CONTENTS –

1.0 BRIEF

1.1 Couch Consulting Engineers have been appointed by Mr Robert Stanley (the client), the building occupant, to carry out a visual Structural Survey of an existing infill residential structure to the premises known as the Old Vicarage, Horton, near Leek, Staffordshire.

1.2 It is understood that the client wishes to re-model the area of the structure at the focus of this report, which involves its demolition and replacement with a new contemporary lightweight single storey extension.

1.3 A letter from Staffordshire Moorlands District Council Planning support reference SMD/2015/0191 dated 13th April 2015 addressed to Scott Millington of Wood Goldstraw Yorath Architects (the client's agent) requests verbatim;

Structural Survey - As your proposal involves the demolition of part of a listed building in a conservation area please provide a Structural Survey to accompany your application.

2.0 INSPECTION

2.1 Date - The inspection was carried out on Wednesday, 15th April 2015

2.2 Extent - The inspection covered the single storey infill extension between the North east corner of the original 18th century house and the later extended outbuilding to the North east of the house. The interface with the adjoining structures was observed and recorded.

2.3 Access for inspection - The building fabric was observed where visible internally and from ground level externally from the north, west and east.

2.4 Weather of inspection - The inspection was undertaken on a cool, dry, cloudy but bright day with a light breeze, following a period of dry weather.

3.0 LIMITATIONS

3.1 This report has been produced on behalf of Mr Robert Stanley and no liability is extended to any other third party for its contents in full or any part therein

3.2 All observations have been made from ground level only unless otherwise noted.

3.3 This report is subject to our standard limitations of inspection attached as Appendix A to this report.

3.4 Buried Foundations, floor slabs and otherwise concealed parts of the structure could not be inspected during the visual survey.

3.5 Other than general comments of structural elements showing signs of movement, excessive deflection, deterioration or otherwise distressed, a detailed structural appraisal of the structure has not been undertaken at this stage.

4.0 GENERAL WIDER DESCRIPTION

4.1 The site is a large residential house and gardens set in a rural location in the Staffordshire moorlands at the foot of the peak district.

4.2 The main part of the house is a two storey masonry construction fronting Heath House lane orientated east to west and is understood to date from the mid 18th Century. It is understood that the rear two storey extension to the north west is of Victorian period and matches the original construction. The main house is clad in brickwork with sandstone features and gables.

4.3 The two storey outbuildings to the north east housing garage areas and storage are constructed in sandstone faced masonry with pitched tiled roofs

5.0 INFILL DESCRIPTION

5.1 The infill building between the main building and the outbuildings (the focus of this report), is a single storey masonry building with timber pitched roof supporting tiles to the eastern pitch and transparent lightweight polycarbonate sheeting to the western pitch (photo 1).

5.2 The roof structure is formed with cut timber rafters (approx. 70mm deep x 40mm wide) supported on timber purlins and external walls (photo 2). There is an exposed external rafter at the northern gable wall which is supported on the timber wall plate which projects out past the face of the gable wall (photo 3)

5.3 The timber purlins span from the rear external wall of the main building to the northern gable wall of the infill or the southern gable wall of the outbuildings, depending on their location.

5.4 The tiled eastern pitch of the roof is underdrawn with T+G timber ceiling, which extends down near the ridge to form a bulkhead. The bulkhead possibly houses service routes between the main building and the outbuilding, although this was not confirmed.

5.5 The masonry walls are approximately 450mm thick solid walls faced with sandstone to the exterior.

5.6 Lintels over the openings are precast concrete (photo 4).

5.7 There is ceramic 'air brick' vent in the western wall (photo 4).

5.8 There is a corbelled sandstone projecting eaves detail to the eastern and western walls (photo 3).

5.9 The stone faced walls are butt jointed up to the external walls of the main building and the outbuildings, the joint filled with mortar.

5.10 There is a chimney stack near the ridge line on the northern gable wall which tightly abuts the outbuildings (photo 1). The chimney stack contains the flue from the boiler. The chimney breast is open at ground floor and is presumed to corbel in towards the ridgeline (photo 5).

5.11 The internal faces of the walls have been directly rough plastered/rendered and painted.

5.12 The ground floor is constructed in solid concrete or brickwork supported by the ground and finished in quarry tiles (photo 6). Door thresholds are engineering brickwork.

5.13 The external wall steps out forming a plinth just above ground floor level to the northern end of the western wall. This is indicative of a shallow stonework foundation.

6.0 OBSERVED DEFECTS

6.1 The western purlin is splitting along its length and starting to 'flake' at it's southern bearing on the main building northern external wall (photo 7). It is

likely that some moisture is entering the purlin from the brickwork above causing moisture content variations and wet rot.

6.2 The stonework to the northern gable is becoming weathered in locations, also mortar is becoming loose and perished (photo 8).

6.3 The exposed end rafter and timber wall plate at the northern gable end are exposed to the elements and are starting to suffer from wet rot (photo 3).

6.4 The floor appears to be slightly undulating although this may be a consequence of poor workmanship during construction.

6.5 Loss of mortar around gutter support brackets leading to loose gutter supports (photo 9)

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Generally the walls of the infill building are of sound construction requiring some level of maintenance to ensure weather-tightness and ongoing serviceability.

7.2 Weathered stones should be replaced and loose and perished mortar should be raked out and re-pointed with a natural hydraulic lime mortar.

7.3 The timber roof structure is generally adequate, although measures should be taken to protect the exposed timbers from further deterioration due to wetting and rot.

7.4 Exposed rafters and wall plates should be enclosed in weather proof boarding.

7.5 Timber purlins built into external brickwork walls should be protected by wrapping in waterproof membrane at the bearing or similar.

7.6 The undulations to the floor are likely to be long standing and are likely not causing a problem to the occupants, therefore no action is recommended.

8.0 APPENDIX A – STANDARD LIMITATIONS OF INSPECTION

8.1 During our inspection of the premises as presently existing, which will normally be carried out in a single visit, we shall check all visible exposed and accessible elements of construction in order to identify defects and shortcomings, which are likely to adversely affect the use of the property or give rise to expenditure in the future. We shall consider the condition and durability of the building fabric in relation to the type and age of the property, the need for repairs or special maintenance and, where appropriate, comment on the suitability of the structure for its proposed use.

8.2 We shall, where possible, lift loose laid floor coverings and inspect cellars and roof voids where appropriate, but we shall not empty the contents of any fitted cupboards, move heavy furniture or lift carpets or floorboards and our report will specifically exclude all covered, and unexposed or inaccessible areas and buried elements of construction such as foundations and built-in steels and timbers. Apart from any balconies and roofs to which external access may be available, our external inspection will be carried out from the ground level. Our report will include a summary of our findings in respect of any outhouses, boundary walls etc. which will be inspected briefly during our visit.

8.3 In accordance with our professional indemnity insurance cover, we have to state "we have not inspected woodwork or other parts of the structure which are covered unexposed or inaccessible and we are therefore, unable to report any such part of the property is free from defect".

8.4 We will not arrange for exposure works to be carried out to the superstructure or below ground, or carry out tests for high alumina cement concrete, calcium chloride, asbestos or the use of woodwool slabs as permanent shuttering, but where appropriate, will seek further instructions for these to be carried out for an additional charge.

8.5 With regard to service installations, incoming mains, waste and drains, we shall report on any matters, which become known during our inspection as requiring further investigation by specialists, but we shall not arrange for tests to be carried out unless specifically instructed beforehand.

8.6 Although where appropriate, we will be happy to examine any lease or title documents, planning or any consents or fire certificates which are made available prior to our inspection, we shall assume in such cases that solicitors will be advising in detail upon these matters and that they will also check on the responsibility for the maintenance of all boundaries and rights of way and the existence of any easements or necessary rights of light, drainage etc.

8.7 We require to be informed, prior to the undertaking of any excavation or boring work, of the positions of any underground services or plant beneath the site. Whilst reasonable care will be taken during the execution of fieldwork, we cannot accept liability, either direct or consequential, for the damage to any service not clearly identified to us.

8.8 If requested our written report will be addressed and forwarded to the undermentioned Client, marked 'Confidential'. Any liability, which may arise from its contents, will be specifically restricted to the Client.

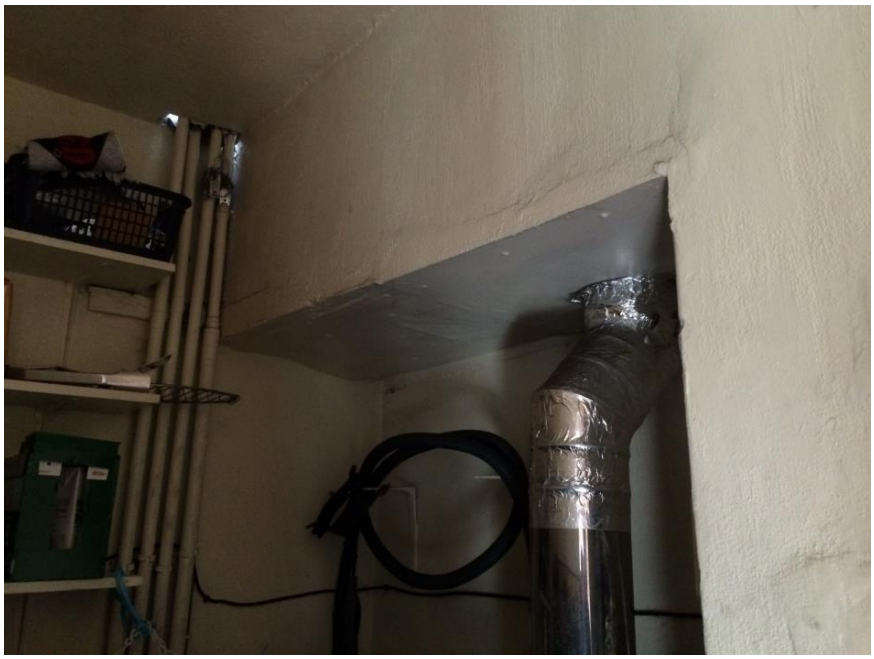
9.0 APPENDIX B – PHOTOGRAPHS

Photograph 1 – View of infill from Northwest

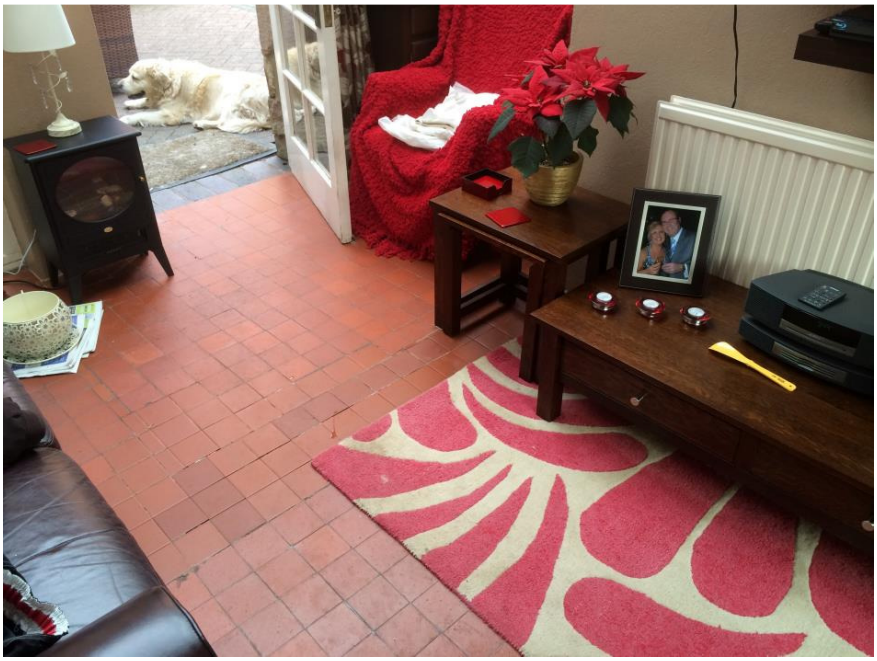
Photograph 2 – Roof structure from inside on western pitch

Photograph 3 – Exposed timber roof structure at Northern gable

Photograph 4 – Western Elevation

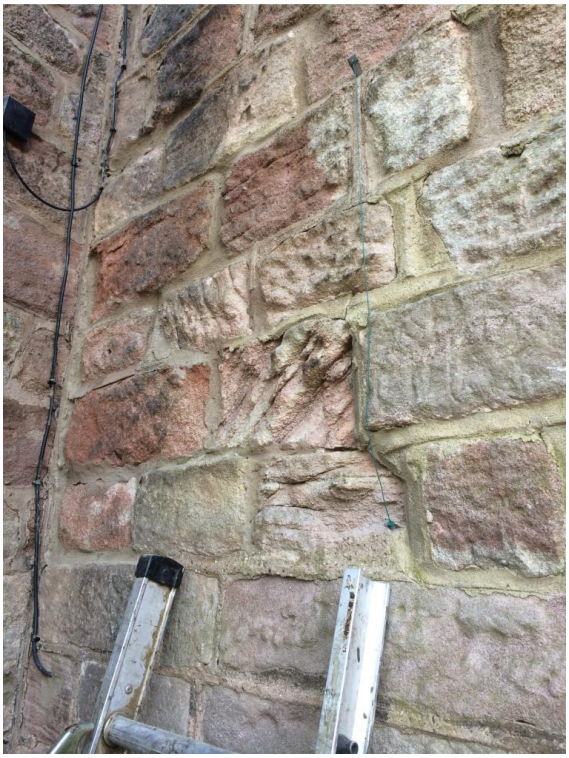


Photograph 5 – Open Chimney breast at ground floor



Photograph 6 – Floor construction

Photograph 7 – Splitting of timber purlin



Photograph 8 – weathered stonework to northern gable

Photograph 9 – Loose gutter brackets