



Consulting Engineers
• Structural • Civil •

STRUCTURAL INSPECTION AND REPORT

Of

OUTBUILDINGS to

HOLLY TREE FARM

MAIN STREET

OXTON

DATE: APRIL 2020

REFERENCE: 5315

STATUS: PRELIMINARY

KEITH SIMPSON ASSOCIATES LTD

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Revision History

Issue No.	Date	Status	Author	Checked	Notes
1	19.05.2020	Preliminary	JS	MVS	

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Report Checked By

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1. Brief

- 1.1 We were appointed by Alex McIntyre Architects to carry out a visual structural inspection of the outbuildings at Holly Tree Farm, Oxtton for and on behalf of their client, The Oxtton Farm Trust.
 - 1.1.1 This visual structural inspection was carried out on behalf of Alex McIntyre Architects and their client and no liability is accepted to any Third Party for all or part herein other than those listed above.
 - 1.1.2 The site is located off Main Street, Oxtton approximately 14 km North East of Nottingham with a National Grid Reference of SK628510.
 - 1.1.3 The site comprises of a two-storey detached dwelling with a series of single storey outbuildings to the north-east of the dwelling. A storm damaged barn is also located on the site. A Site Plan is attached as Appendix A.
 - 1.1.4 This report covers the single storey outbuildings only and no structural survey has been carried out by Keith Simpson Associates Ltd on any other buildings on site.
 - 1.1.5 We visited the outbuildings on 19th February 2020.
 - 1.1.6 At the date and time of our site visit to the property, the weather was overcast and the outbuildings were unoccupied and also unheated.
 - 1.1.7 The structural inspection comprised of a visual examination of the existing structural fabric that could be viewed safely.
 - 1.1.8 Any parts of the structure that had been covered or were not able to be safely accessed have not been inspected and we are therefore unable to report that any such part of the building is free from defect.
 - 1.1.9 External observations were made from ground level only.
 - 1.1.10 A Site Plan is attached as Appendix A.
 - 1.1.11 Any photographs referenced to within the Observations sections of this report can be found at Appendix B.
 - 1.1.12 Where reference is made to KSA drawings, these are attached as Appendix C.
 - 1.1.13 This report does not address any environmental or asbestos related issues.
 - 1.1.14 This report should be read in full.

2. External Observations

2.1 Building Description

- 2.1.1 The outbuildings are detached and comprised of a series of single storey areas as follows:-
- Garage with pitched roof covered with interlocking concrete tiles.
 - Barns with hipped roofs covered with interlocking concrete tiles
- 2.1.2 At the rear of the building was a single storey lean to with a mono-pitched roof covered with corrugated sheeting.
- 2.1.3 The external walls of property were constructed from solid brickwork.

2.2 Roof and Roofline

- 2.2.1 The garage ridge line to the pitched rafter roof undulates along the length of the garage.
- 2.2.2 The barn hips were not true to line and the pointing to the hip tiles was poor/ missing in areas.
- 2.2.3 The barn roof tiles were not in good condition and some areas of the roof had missing tiles exposing the structure below to the elements.
- 2.2.4 The rainwater guttering was loose and broken in places and was causing wetting of the brickwork.
- 2.2.5 The rainwater down pipes were missing / broken and leaking in places and not discharging directly into the below drainage system

2.3 Walls

- 2.3.1 The front elevation to the garage (Elevation C on drawing ref: ST-02) had areas of frost damaged brickwork and areas of rising damp / moss growing up the walls.
- 2.3.2 Moss growth was noted in patches around the base of the buildings indicating rising damp.
- 2.3.3 The side elevation (noted as Elevation B) also had areas of frost damaged brickwork/ weathering and areas of rising damp / moss growing up the walls. The existing timber lintels on this elevation were exposed and damaged and where the beams bear onto the external wall, cracking and displacement of the masonry had occurred.
- 2.3.4 The whole of opposite side elevation to the garage (noted as Elevation D) had suffered from frost damaged brickwork/ weathering. The opening within this side elevation had been formed with brick arches over however, a large horizontal crack was noted within one of the arches and the other arches were not in good condition either.

3. Internal Observations

3.1 Roof Space

- 3.1.1 Full access to the roof space was not restricted.
- 3.1.2 A visual inspection showed that the roof construction to all areas was of timber construction with loose rafters over purlins.
- 3.1.3 The roof structure comprising of timber rafters and purlins within the garage was showing signs of deflection.
- 3.1.4 The rafters and purlins within the barn areas were adequately propped and showed no signs of excessive deflection. The existing trusses were also generally in good condition.
- 3.1.5 Generally, shafts of light were showing into the roof space and large areas of the roof coverings were missing in some locations exposing the structure below.
- 3.1.6 There were no openings in the party wall within the roof space.

3.2 Ground Floors

- 3.2.1 Generally, the floors were of solid concrete or brickwork construction.
- 3.2.2 The floors to the property were not level and were also damp in some areas.
- 3.2.3 No damp course was noted throughout the building at any level. Rising damp was seen round the lower courses surrounding the building and on the internal walls, however, this is a specialist item and if required should be inspected by a specialist damp and timber preservation company. (other than mould growth due to condensation)

4. Discussion and Recommendations

- 4.1.1 It is understood that the outbuildings are to be refurbished into habitable residential use.
- 4.1.2 The rear lean-to is to be demolished to facilitate a new extension to the building.
- 4.1.3 Due to the undulating ridge to the garage the entire garage roof structure is to be removed and replaced. All designs and details to be fully in accordance with current Building Regulations.
- 4.1.4 Where areas of missing tiles have caused the roof structure to become exposed, localised repairs to the roof structure are required and replacement of some existing timber members may be required.
- 4.1.5 All roof finishes, generally require removing and replacing with new tiles, battens, felt/ breather membrane all in accordance with the Architects Specification.
- 4.1.6 The existing timber lintels and brick arch lintels require removing and replacing as indicated on drawing ST-01.
- 4.1.7 Significant amounts of missing and loose mortar were noted across the whole façade of the structure. This is due to exposure to the environment and the poor maintenance of the building in the past. We recommend that initially all loose mortar is removed and the façade, were required, be repointed.
- 4.1.8 Some areas of the external brickwork have suffered from frost damage, especially those areas that are more exposed to the elements. We believe that the frost damage brickwork is a combination of the exposed location of the buildings, the lack of maintenance of the gutters, downpipes and a lack of damp proof course to the majority of the structure. We would recommend that the areas of brickwork with moderate to severe frost damage to the outer leaf should be replaced with similar brickwork.
- 4.1.9 All existing rainwater goods are to be replaced and connected into the existing positive drainage system. A survey of the existing drainage is required as mentioned in section 5.
- 4.1.10 All ground floor construction is of an unknown thickness. The floors are generally uneven and have raised areas. It is also unlikely that the floors are insulated or have a damp proof membrane. We recommend that the existing floor slabs and brick floors be broken up and reconstructed in accordance with current Building Regulation Standards.
- 4.1.11 We have provided remedial works drawings referenced ST-01 and ST-02 (attached in Appendix A) to summarise and outline the remedial works discussed to bring the buildings in line with current Building Regulation Standards.

5. Recommended Further Investigation

5.1.1 CCTV Drains Inspection

Leaking water from drainage pipes may be a factor to some of movement within the external walls. A CCTV inspection of the drains is recommended.

Keith Simpson Associates would be able to arrange for a quotation for a CCTV drain inspection report to be carried out. This inspection would consist of a CCTV drain surveyor, Drain Inspect UK, who would visit site, undertake a camera inspection of the drains and water jet the drains if applicable (subject to confirmation by the Client and for an additional charge). They would then prepare a report and either a video or DVD.

5.1.2 Trial Pit

A trial pit investigation is recommended to determine the size, type and depth of the existing foundations. Subject to findings, the existing foundations may require underpinning / strengthening to bring them in line with current Building Regulations for the proposed use of the building.

5.1.3 Damp and Timber Inspection

The areas of damp / rot noted in the report should be inspected by a specialist damp proofing / timber preservation company.

The damp and timber inspection would be undertaken by a BWPDA (or equivalent) approved specialist who will advise on the nature of the problem, the remedial work required and the likely cost

The lifting of floor coverings and the moving of furniture is not generally undertaken by the damp and timber contractors. Should the inspection of timber floors / sub floor areas be required then it is preferable that the home owner undertakes the lifting of floor coverings and the moving of furniture themselves.

Should this not be possible then permission must be sought from the current owner and the contractor to confirm that both parties are comfortable with the lifting of floor coverings and the moving of furniture where deemed necessary.

We, as a company, and the contractor acting on our behalf, cannot be held liable should any damage be sustained to the floor coverings or the furniture whilst the inspection is being undertaken.

Appendix A – Site Plan



Appendix B - Inspection Photographs



Photo. 01



Photo. 02



Photo. 03



Photo. 04



Photo. 05



Photo. 06



Photo. 07



Photo. 08



Photo. 09



Photo. 10



Photo. 11



Photo. 12



Photo. 13



Photo. 14



Photo. 15



Photo. 16



Photo. 17



Photo. 18



Photo. 19



Photo. 20



Photo. 21

Appendix C – Structural Remedial Drawings

GENERAL ROOF TIMBER NOTE
 ALL EXTG. ROOF TIMBERS ARE TO BE ASSSESSED BY SPECIALIST FOR DAMP/TIMBER CONDITION. SPECIALIST TO ADVISE ON SCOPE OF REMEDIATION / REPLACEMENT WORKS TO BE CARRIED OUT.

GENERAL ROOF FINISHES NOTE
 ALL ROOF FIELDS & BAFFLES TO BE REMOVED AND REPLACED WITH NEW TILES, BAFFLES, FELT & BISHOP'S MEMBRANE ALL IN ACCORDANCE WITH ARCHITECT'S DETAILS.

EXTG. TIMBER UNTEL IS BROKEN & IS TO BE REPLACED AND OPENINGS INFILLED AS PART OF REDEVELOPMENT

DENOTES SPAN OF EXTG. 75 x 75 RAFTERS @ 400mm CTS.

EXTG. UNTEL REQUIRES REPLACEMENT WITH NEW GALV. STEEL BEAMS

EXTG. ROOF TO BE REMOVED & REBUILT FULLY IN ACCORDANCE WITH ARCHITECT'S & STRUCTURAL ENGINEER'S DESIGN / DETAILS

MISSING TILES. ROOF STRUCTURE TO BE REPLACED AS IT HAS BEEN EXPOSED TO THE ELEMENTS FOR SOME TIME.

LARGE HORIZONTAL CRACK & DISPLACEMENT IN BRICKWORK ARCH. BRICKWORK ARCH TO BE REBUILT BY BULKER BRICK CUTTING.

BRICKWORK ARCHES TO BE REBUILT BY BULKER BRICK CUTTING.

GROUND FLOOR PLAN
 (SCALE 1:50)

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1	10/03/20	PRELIMINARY ISSUE	JS



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Client
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Project
 ALTERATIONS to
 HOLLY TREE FARM
 MAIN STREET
 OXTON

Drawing Title
 REMEDIAL WORKS PLAN

Managing Engineer
 Jordan Stephenson

Scale
 1:50

Date
 MAR 20

Size
 A1

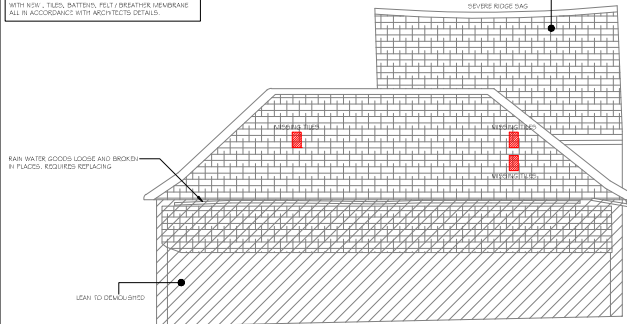
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 P1

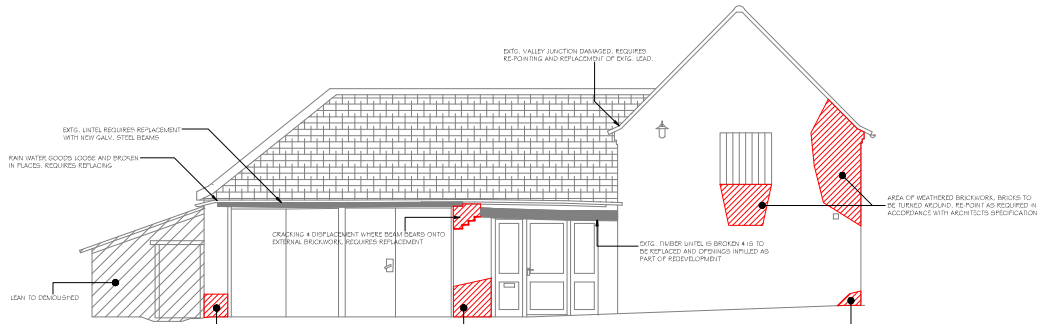
GENERAL ROOF TIMBER NOTE
 ALL DTG ROOF TIMBERS ARE TO BE ASSIGNED BY SPECIALIST FOR DAMP TRIBE CONDITION. SPECIALIST TO ADVISE ON DETAIL OF REMEDIATION / REPLACEMENT WORKS TO BE CARRIED OUT.

GENERAL ROOF FINISHES NOTE
 ALL ROOF FLEES & DATINGS TO BE REMOVED AND REPLACED WITH NEW. FLEES, DATINGS, FELT / BREATHER, UNDERLIE ALL IN ACCORDANCE WITH ARCHITECTS DETAILS.

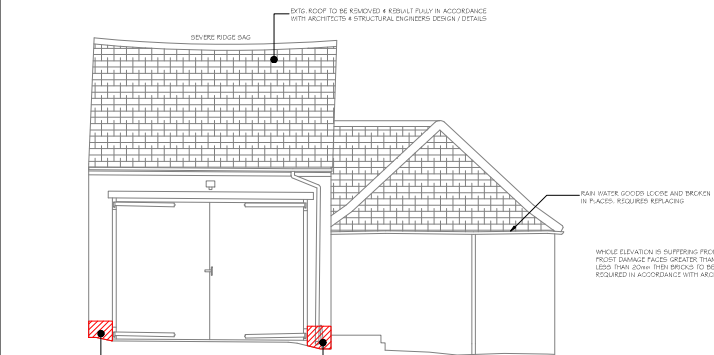


ELEVATION A
 (SCALE 1:50)

DTG ROOF TO BE REMOVED & REBUILT FULLY IN ACCORDANCE WITH ARCHITECTS & STRUCTURAL ENGINEERS DESIGN / DETAILS

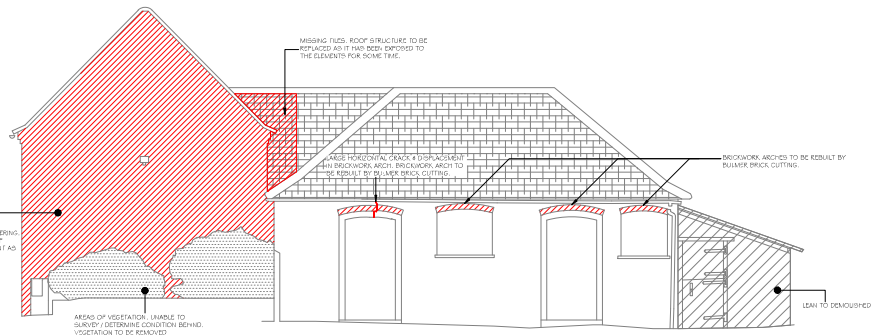


ELEVATION B
 (SCALE 1:50)



ELEVATION C
 (SCALE 1:50)

WHOLE ELEVATION IS SUFFERING FROM FRONT DAMAGE. WEATHERING. REPAIR DAMAGE FACES GREATER THAN 25mm TO BE REPLACED. IF LESS THAN 25mm THEN BRICKS TO BE TURNED AROUND. REPOINT AS REQUIRED IN ACCORDANCE WITH ARCHITECTS SPECIFICATION



ELEVATION D
 (SCALE 1:50)

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Drawing Title
 REMEDIAL WORKS ELEVATIONS

Managing Engineer Jordan Surphenson
 Scale 1:50 Date MAR 20 Size A1

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