JP Chick & Partners Ltd

Consulting Civil & Structural Engineers

Stable Building
The Old Rectory
Drinkstone
Suffolk

STRUCTURAL INSPECTION REPORT

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1.0 BRIEF

1.1 J P Chick & Partners Limited were appointed by Soup Architects on behalf of Mr and Mrs Hill to undertake a visual structural inspection of the stable building to comment on condition and suitability for conversion. The inspection will also identify areas of defects giving outline remedial works and any further investigations required. Our appointment was received on Tuesday 8th February 2022 and our inspection was undertaken on Monday 14th March 2022.

1.2 At the time of our inspection the weather was dry, sunny and warm.

1.3 The main consideration of our visual inspection to the stable was to appraise the building for its suitability for conversion of the stable building into a workshop at ground floor and office space at first floor.

2.0 GEOLOGY AND ENVIRONMENT

2.1 With reference to the British Geological Survey online maps of Great Britain, the site is shown to be underlain by near surface superficial deposits of River Terrace Deposits – Sand and Gravel, overlying Thames Group – Clay, Silt and Sand.

3.0 BRIEF DESCRIPTION

3.1 The stable is a detached building located within the grounds of The Old Rectory, Drinkstone. The stable is located to the south-west of the Old Rectory and according to historic mapping was previously called Tithe Barn. The south section of the stable has already been partially converted into residential space and has been rented out. The remaining parts of the stable are used for storage.

3.2 The stable is constructed of flint walls with brick quoins which bear onto a masonry plinth. The roof to the barn is a hand cut hipped roof.

3.3 For the purpose of this report, we have used the compass orientation provided on Soup Architects Drawings.

4.0 OBSERVATIONS

4.1 Internal

4.1.1 The stable building is of flint wall construction with brick quoins built off masonry plinth walls. It is anticipated that the flint wall has a rubble / masonry core with flint facing internally and externally.

4.1.2 The flint walls to the entrance of the stable building have suffered from cracking. The cracking is vertical in nature and originates from the bottom of the plinth wall to the wall plate. The crack to the flint walls was approximately 30mm to 40mm. It is noted that the external flint walls to this area do not show any signs of cracking or movement and are in good condition.

4.1.3 The first floor is of mezzanine construction which extends in width across most of the barn. The floor is independent of the stable building and is of timber construction. The mezzanine is support by timber posts which appear to bear off the existing concrete slab. The first floor is accessed by a temporary staircase. The mezzanine floor showed no significant signs of deflection or deterioration.

4.1.4 Cracking has also occurred to the flint wall at first floor to the northeast corner which has similar characteristics to the cracking located at the entrance of the stable building. The cracking originates from wall plate level past the mezzanine floor. Due to storage being located within the stable at ground floor we were unable to determine whether this crack continues to the plinth wall. The cracking is 20mm to 30mm wide.

4.1.5 Cracking was also observed to the east elevation of the stable located to either side of the air vents. The cracking to the left-hand side of the air vent is approximately 20mm to 30mm in width and the crack to the right-hand side is around 5mm.

4.1.6 The north-west corner of the stable building has also suffered from cracking. The cracking to this corner of the building, similar to the other, is vertical in nature but does not originate from the wall

plate. This cracking is approximately 5mm to 10mm wide. The northwest corner of the barn, at wall plate level, has had a steel corner strap installed.

4.1.7 The roof structure is a hand cut hipped roof. The rafters to the roof are in good condition with no signs of deflection, degradation, or infestation. The rafters bear onto the wall plate which is also in a good condition and free of any significant defects. Purlins are located at mid-level throughout the roof structure and is supported by collars. The purlins are undersized which has resulted in lateral forces causing roof spread. The east and west wall plates are tied together with timber ties.

5.0 LIMITATIONS

5.1 This report shall be for the private and confidential use of the client for whom it was undertaken, and it should not be reproduced in whole or in part or relied upon by third parties for any use without the express written authority of J P Chick and Partners Limited.

5.2 Unless stated otherwise in the report, we have not disturbed any fixtures and therefore no fitted carpets, floorboards or linings have been removed. Coupled with this, we have not exposed the foundations or tested the drains to the stable building. We are therefore unable to report that such part of the property is free from defect.

5.3 We have not inspected woodwork or other parts of the structure, which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

5.4 The condition of the finishes, waterproofing and damp penetration, unless specifically referred to, are not the subject of this report.

6.0 CONCLUSIONS AND RECCOMEDNATION

6.1 Based upon our inspection we consider the cracking that has occurred to the flint walls has been caused by roof spread. The roof spread has primarily affected the corners of the building as this is where the hips are located. The cracking appears to have been limited in the northwest corner through the installation of steel corner strap which is fixed to the two wall plates. It is recommended that where the roof spread has occurred to the entrance that a feature truss is installed to prop the roof apex and tie the hip roof together. Where the cracking has occurred to the northeast and northwest, we recommend dragon ties or similar are installed to prevent further roof spread.

6.2 The cracked flint walls are to be repaired with Helifix Helibar, or similar, which is to tie the new face back to the existing core. The installation method is to be in accordance with manufacturers specification. Given the specialist nature of the works, a suitably experienced and competent contractor is to be used.

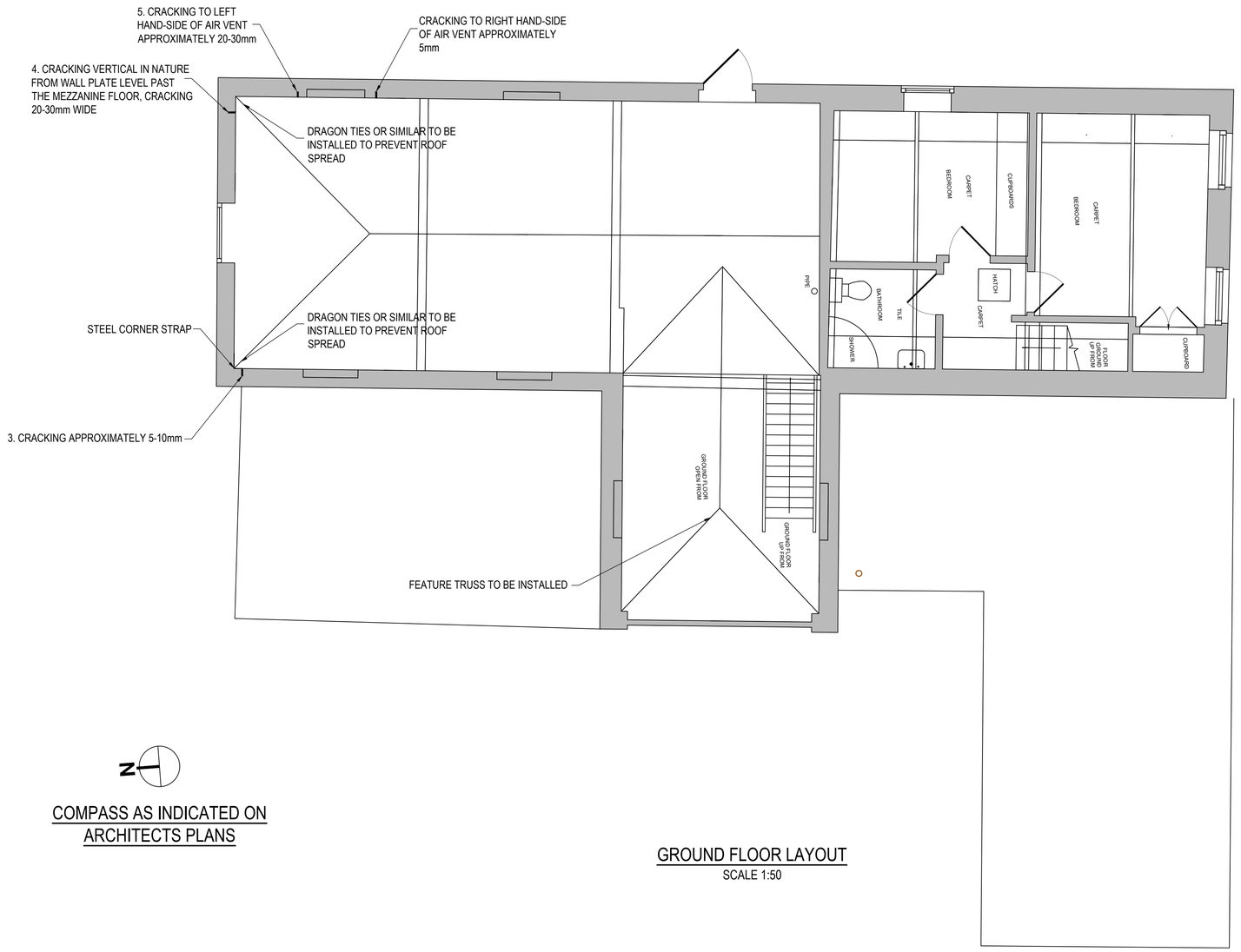
6.3 The current roof structure to the stable building is in a reasonable condition however it has suffered from roof spread. The rafters and ridge do not show significant signs of deflection or deterioration. We consider that the rafters will be suitable for incorporation into a future development subject to final design review and calculation check for loadings. These rafters may require strengthening if they are deemed to be undersized. Remedial works will be required to prevent further roof spread which will include upgrading / augmenting the existing purlins as well as the works stated in section 6.1 of this report.

6.4 The mezzanine floor at present is in reasonable condition with minor defects. The staircase is of minimal construction and will need to be replaced as part of any conversion works. It is anticipated that the timber posts that support the mezzanine floor bear onto the existing concrete slab. This will need to be investigated and if required the posts will require a pad foundation. We consider that the mezzanine floor would be suitable for incorporation into a future development subject to a final design review and calculation check for loading such as domestic use.

6.5 The existing concrete floor slabs are in reasonable condition. However, in order to achieve insulation to current statutory requirements and damp proofing requirements for a residential development the existing slab will need to be built over or removed and a new insulated floor installed.

6.6 Whilst we have not inspected the foundations, there are no signs of any significant foundation movement or articulation of any of the brickwork plinths, nor are there any visible movements to the floor slabs. In addition, upon reviewing the British Geological Survey maps the geology of the site Lowestoft Formation – Diamicton and Croxton Sand and Gravel Member. Due to the limited movement, we consider that, subject to verification by site investigation that the foundations may be suitable for the proposed loads of a development subject to final design review and calculation check for loadings.

Appendix A – Drawing No IA22/025/100 and 101



COMPASS AS INDICATED ON ARCHITECTS PLANS

GROUND FLOOR LAYOUT
SCALE 1:50

CRACKING LOCATION 3

CRACKING LOCATION 4

CRACKING LOCATION 5

ROOF STRUCTURE

AREA WHERE FEATURE TRUSS IS TO BE INSTALLED

Notes

GENERAL

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ENGINEERS AND, ARCHITECTS AND SPECIALISTS DRAWINGS AND THE SPECIFICATION. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORKS.

2. ALL WORKMANSHIP AND MATERIALS ARE TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT EUROCODES, CODES OF PRACTICE AND GOOD BUILDING PRACTICE.

3. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER AND THE LOCAL AUTHORITY.

4. SETTING OUT DETAILS ARE SHOWN ON THE ARCHITECTS DRAWINGS UNLESS NOTED OTHERWISE. ENGINEERS DRAWINGS INDICATE STRUCTURAL ELEMENTS ONLY.

5. DO NOT SCALE THIS DRAWING. ALL DIMENSIONS ARE IN MILLIMETRES. THE CONTRACTOR IS TO CHECK ALL DIMENSIONS ON SITE BEFORE CARRYING OUT ANY WORKS.

6. ALL EXISTING DETAILS AND DIMENSIONS INDICATED ON THIS DRAWING ARE FOR GUIDANCE ONLY AND ARE TO BE CHECKED ON SITE BY THE CONTRACTOR.

7. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST TAKE ALL NECESSARY PRECAUTIONS TO ENSURE THE STABILITY OF EXISTING STRUCTURES AND THE WORKS AT ALL TIMES DURING CONSTRUCTION.

8. ALL SERVICES ARE TO BE LOCATED AND PROTECTED AS NECESSARY BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF THE WORKS.

9. THIS DRAWING IS FOR THE PRIVATE AND CONFIDENTIAL USE OF THE CLIENT FOR WHOM IT WAS UNDERTAKEN AND IT SHOULD NOT BE REPRODUCED IN WHOLE OR IN PART OR RELIED UPON BY THIRD PARTIES FOR ANY USE WITHOUT THE EXPRESS WRITTEN AUTHORITY OF J P CHICK AND PARTNERS LIMITED.

Rev.	Date	By	Amendment	Chk	App
P1	18.05.22	LH	PRELIMINARY		

Status
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Client
MR & MRS HILL

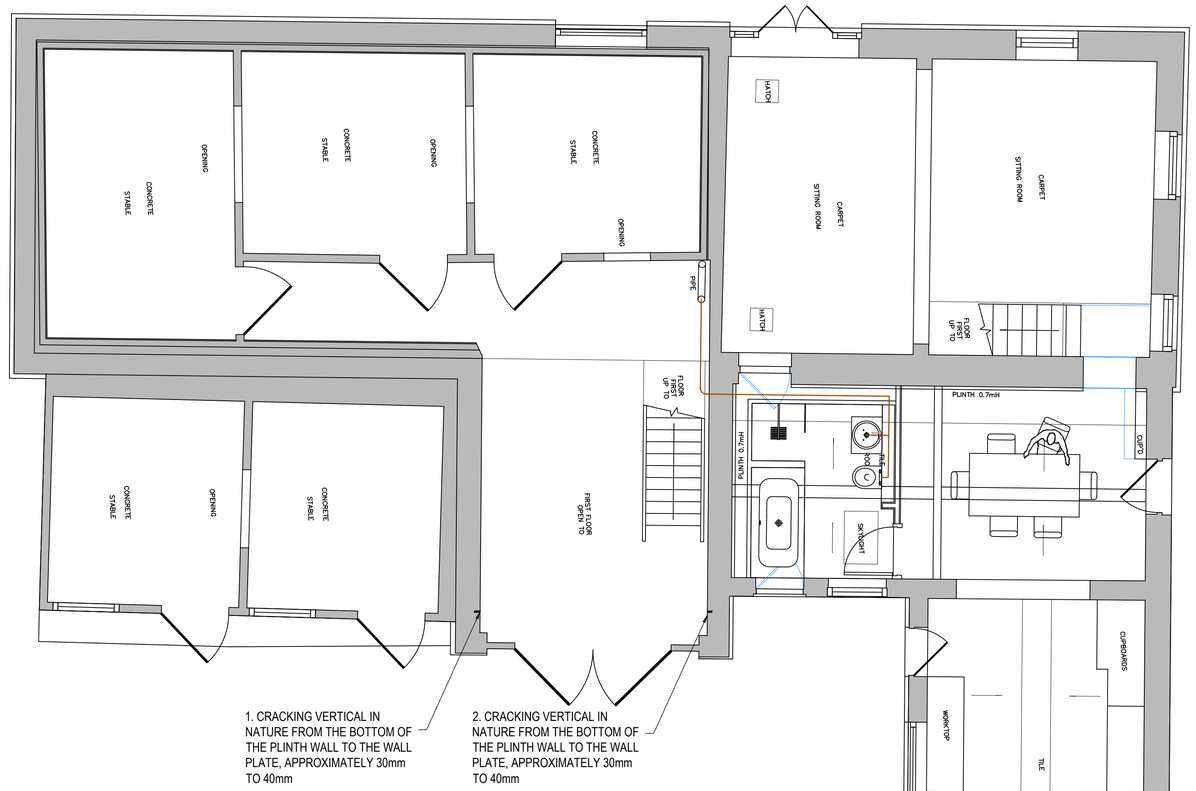
Project
THE OLD RECTORY
DRINKSTONE

Drawing Title
STABLE BUILDING,
STRUCTURAL COMMENTS,
FIRST FLOOR

Scale	Checked	Date
1:50 @ A1		

Date	Drawn By
MAY 2022	LH

Drawing Number	Rev
IA22-025-101	P1



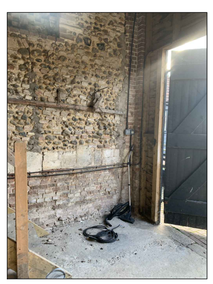
1. CRACKING VERTICAL IN NATURE FROM THE BOTTOM OF THE PLINTH WALL TO THE WALL PLATE, APPROXIMATELY 30mm TO 40mm

2. CRACKING VERTICAL IN NATURE FROM THE BOTTOM OF THE PLINTH WALL TO THE WALL PLATE, APPROXIMATELY 30mm TO 40mm

COMPASS AS INDICATED ON ARCHITECTS PLANS

GROUND FLOOR LAYOUT
SCALE 1:50

CRACKING LOCATION 1



CRACKING LOCATION 2

Notes

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