Ellfield (Structural) Ltd
Consulting Structural & Civil Engineers

Ellfield House Hanthorpe Road Stainfield
Bourne Lincolnshire PE10 0RR

Tel: 01778 571483 Fax: 01778 571626
email: john@ellfield.com



STRUCTURAL ENGINEERING APPRAISAL REPORT

ON THE STRUCTURAL CONDITION OF

THE PROPERTY AT

'CEDARWOOD' CEDAR ROAD

WHAPLODE SPALDING

LINCOLNSHIRE

Our Ref: ES6459/14/JCE/pae **JULY 2014**

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1.0 INTRODUCTION

1.1 Ellfield (Structural) Limited were requested by Mr C Penny on behalf of Mr Robin Hancox of Woolhall Farm Wykeham Spalding Lincolnshire to carry out a visual structural condition appraisal of the timber framed building 'Cedarwood' Cedar Road Whaplode Spalding Lincolnshire.

1.2 The report is required by Mr Hancox to verify the structural condition of the building to assess the longevity of the building and the economics of upgrading the building to current standards.

1.3 The report is based on visual observations, notes taken on site and verified by photographs and should be construed as a comment upon the overall condition of the property, the quality of its structure but not an inventory of every single defect.

1.4 It was not possible to inspect parts of the structure which were covered, unexposed, or otherwise inaccessible, but the report does relate to all parts of the structure which were reasonably accessible.

1.5 The purpose of this report is limited to an opinion on the structural condition of the property. We have only reported upon those structural defects that materially affect the stability of the property and provided that these defects are reasonably detectable at the time of our inspection. Whilst we have used all reasonable skill and care in preparing this report it should be appreciated that we cannot offer any guarantee that the building will be free from future defects or that existing ones will not suffer from further deterioration.

1.6 This report is to be regarded as confidential to the party to whom it is addressed and it is intended for the use of that party only. No responsibility will be accepted to any other party in respect of its contents in whole or in part. Prior to the report or any part of it being reproduced or referred to in any documents, our written approval as to the form and content must first be obtained.

2.0 INVESTIGATIONS

2.1 Ellfield (Structural) Limited visited the property on 25th June 2014, to inspect the external and internal fabric of the building.
Weather conditions during the site visit were sunny and warm.

2.2 The external and internal surfaces were examined for signs of distress, usually indicated by cracking of the any masonry present due to either differential movement of the fabric, the effects of temperature or moisture changes, or a combination of them all, or distortion or distress of structural timbers from over-loading or decay.

External inspection of the building has been carried out from ground level by visual sighting.
Internal inspection is made within the limits of ready accessibility and it is not normal practice to lift floor coverings or floor boards, remove panels or plaster, or move heavier items of furniture. Consequently, we have not been able to inspect woodwork or any other parts of the structure which are covered, unexposed, or inaccessible and we are therefore unable to report that any such part of the building is free from defect.

2.3 The foundations were not inspected during our visit.

2.4 The roof structure was viewed externally and internally from an access hatch for signs of distress, due to excessive deflection or distortion of the principal members.

2.5 This report is confined to an inspection of the structural elements of the property only. Therefore, the report excludes any inspection or comment on drainage, electrical and mechanical installations, decorative conditions, damp proofing, non-structural timber fixings, fittings, mouldings, coverings and all non-structural matters.

2.6 Existing drainage was not tested at this stage.

3.0 GENERAL DESCRIPTION OF THE SITE AND BUILDING

3.1 The building is a detached single storey building, situated on a level site in the village of Whaplode East of Spalding Lincolnshire.

3.2 The building is a freestanding timber framed structure and is thought to have been constructed in circa 1960.

3.3 The construction of the property consists of:-

(a) Main Pitched Roof - A traditional cut timber roof of principal trusses with purlins and common rafters with a concrete interlocking tiled cladding.

(b) External Walls - Timber stud walls with an external cedar wood boarded cladding and an internal dri-lined fibre board facing.

(c) Internal Walls - Timber stud walls with a dri-lined fibre board facing.

(d) Ground Floors - Solid ground bearing construction of presumably mass concrete

(e) Foundations - Presumably mass concrete strip footings.

3.4 Published geological records show the building to be within an area where the soil sequence consists of a solid formation of West Walton Mudstones overlain by Terrington Beds consisting of marine alluvium, sandy silt, sand and clay.

3.5 There are no mature trees close to the building but the boundaries are lined with conifer hedges.

4.0 STRUCTURAL DEFECTS/CONDITION LOG

4.1 The following schedule identifies and highlights the structural defects observed during the survey and is likely to be indicative of defects elsewhere in the structure that were not surveyed or inaccessible:-

4.2 External Surfaces

- All Elevations. - There were no signs of excessive timber rot or decay of the external facing Cedarwood boarding.
- Concrete coping to chimney stacks had exposed reinforcement visible due to corrosion of steel and subsequent spalling of concrete due to expansion.
- Some minor timber decay around windows.
- Cracking to exposed slab concrete on side conservatory extension.

4.3 Internal Surfaces

- The internal wall surfaces appeared to be sound with no signs of major defects. The internal dri-lining appeared to be fibrous in the boiler cupboard which may have contained asbestos.
- The solid ground floors showed no signs of significant settlement usually shown by gaps below skirting boards.
- The ceilings boards did not exhibit any cracking which is usually attributed to angular distortion of the building caused by differential settlement.

4.4 Foundations

The foundations were not exposed but the building did not show any signs of differential settlement and the foundations appeared to have performed adequately over the life of the building.

4.5 Roof Structure

Generally the main roof structure did not exhibit any signs of major distortion or distress in the form of sagging or deflections. The timbers did not appear to have any decay or insect infestation.

5.0 OBSERVATIONS AND COMMENTS

5.1 The main single storey building is constructed of load bearing braced timber studwork faced with cedar tongued and grooved horizontal boarding finished with a dark stained coating supporting a traditional cut timber roof of principal trusses with purlins and common rafters with a concretes tiled covering. Foundations are presumed to be mass concrete strip footings formed on the Terrington Beds of firm silts. Ground floors are of solid ground bearing presumably mass concrete.

5.2 The fabric of the building does not appear to have weathering and lack of routine maintenance which normally causes degradation with resulting decay and rotting of the timber. There is some areas of timber decay around windows. There is some cracking to the exposed concrete on the site conservatory extension.

5.3 The ground floors do not show any noticeable settlement.
The foundation pads again with very limited access did not show any signs of significant differential settlement.

5.4 The main flat roof structure is essentially formed from a series of principal trusses supporting purlins and common rafters. The general condition of the roof appears to be reasonable and there are no sign of any excessive deflection or distortion of the roof timbers.

5.5 The general condition of the building is reasonable for this type of construction. The walls are very slender and it is unlikely that they contain any or sufficient insulation to meet current standards for heat loss.

5.6 The materials used for the wall linings appear to be of a fibrous nature and consideration should be given to test the material for any asbestos content.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 The building does not appear to have suffered from lack of general maintenance. For continued usage the building and to provide an extended life it will require complete replacement of the external cedar wood boarding to provide a durable weather-tight building.

6.2 The internal wall boarding should be tested for asbestos content. The chimneys should be repaired/rebuilt and the flues tested for leaks. Any timber rot and decay should be repaired/replaced. The cracked to the slab should be repaired.

6.3 Notwithstanding the above works we consider that the thermal resistance both to high summer temperatures and low winter temperatures is very poor and to bring the building up to current standards would necessitate the removal of internal wall boards to introduce improved insulation and would almost certainly require an increased thickness of the wall to accommodate the thickness of insulation required. Associated with this would be to install new double glazed windows. All new work would need to comply with current Building Regulations, British Standards and Codes of Practice.

6.4 In conclusion we consider that to upgrade the building to current standards it is uneconomical when compared to providing a replacement building of the same size in terms of lifespan and the quality required for its present use to give a comfortable living environment for the occupants.

Ellfield (Structural) Limited



John Ellington B.Sc., C.Eng., M.I.Struct.E., FRSA, M.Inst.D.
Director

APPENDIX ‘A’ - PHOTOGRAPHS



Photo – No.1 – Front Elevation.



Photo – No.2 – Rear Elevation.



Photo – No.3 – Side Gable Elevation



Photo – No.4 – Typical Timber Decay Defect.



Photo – No.5 – Cracked Concrete Slab Defect.



Photo – No.6 – Cracked and Spalled Concrete Coping Slab on Chimney



Photo – No.7 – Typical Roof Construction