

Ellfield House Hanthorpe Road Stainfield
Bourne Lincolnshire PE10 0RR

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

**STRUCTURAL APPRAISAL REPORT,
Timber Framed Office Building at
132 Cock Bank Whittlesey Peterborough Cambridgeshire**



Property:-	Office Building:- 132 Cock Bank Whittlesey Peterborough Cambridgeshire PE7 2HN	Instructed:- Oct 2021 Surveyed:- Nov 2021
Client:-	Mr R Dempsey 122 Duncombe's Road Turves Peterborough Cambridgeshire PE7 2DS	Survey & Report by:- John Ellington BSc. CEng M.I.Struct E,
Reference:-	ES7301A/21/pae	Report Issued:- Nov 2021

**TIMBER FRAMED OFFICE BUILDING
132 COCK BANK
WHITTLESSEY
PETERBOROUGH
CAMBRIDGESHIRE**

STRUCTURAL APPRAISAL RPORT,

Ref:- ES7301A/21

C O N T E N T S

SECTION 1.0 - BRIEF

SECTION 2.0 - INTRODUCTION AND SCOPE

SECTION 3.0 - GENERAL DESCRIPTION OF SITE AND BUILDINGS

SECTION 4.0 - OBSERVATIONS AND COMMENTS

SECTION 5.0 - CONCLUSIONS AND RECOMMENDATIONS

APPENDIX A - PHOTOGRAPHS

1.0 BRIEF

- 1.0 Ellfield (Structural) Limited were requested by Mr M Bacon of Fenland Architectural Design on behalf of Mr Robert Dempsey of 122 Duncombe's Road Turves Peterborough Cambridgeshire to inspect and report on the structural condition of the range of building at 132 Cock Bank Whittlesey Peterborough Cambridgeshire.

2.0 INTRODUCTION AND SCOPE

- 2.1 The building is located in a rural area south-east of the town of Whittlesey near Peterborough in Cambridgeshire.
- 2.2 The report is required to support a planning application for change of use to a dwelling.
- 2.3 Ellfield (Structural) Limited visited the property on 2nd November 2021, to carry out a visual structural condition survey of the building.
- 2.4 Weather conditions during the site visit were sunny and mild for the time of year.
- 2.5 The report is defined as a Structural Appraisal Report and is based on visual observations and notes taken on site and verified by photographs and should be construed as a comment upon the overall structural condition of the building, the quality of its structure and not an inventory of every single defect.
- 2.6 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. There has been no opening up works involved in the investigation and finishes have not been removed. We therefore cannot guarantee that any such parts are free from defect.
- 2.7 The purpose of this report is limited to an opinion of the structural condition of the building. We have only reported upon those structural defects that materially affect the stability of the building 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.

- 2.8 The external and internal fabric where accessible were examined for signs of distress, usually indicated by cracking due to either differential movement of the fabric, weathering effects due to temperature or moisture changes, timber decay due to water ingress or insect infestation or a combination of them all. The observations and defects noted in order to prepare this report should not be considered as a comprehensive inventory of each and every single item witnessed during our survey. Instead the observations have been taken as an indication of the condition of the structure in general and should demonstrate the likely defects that may be present elsewhere in areas of the fabric that have not been surveyed or recorded.
- 2.9 The report does not contain observations, comments or recommendations to any non-structural items including, but not limited to drainage, electrical installations.
- 2.10 Decay associated to damp, fungal attack, insect infestation or contamination is outside the scope of our appointment or reports. Any reference to decay associated to damp, fungal attack, insect infestation or contamination to either structural or non-structural items are observations only. As such we recommend that further advice is sought from specialists in the fields of damp, fungal attack, insect infestation or contamination in order to guarantee peace of mind from these potential defects.
- 2.11 The performance of foundations referred to within this report, are based on a single trial hole excavation, and as such we cannot guarantee that the foundation system is free from defects throughout.
- 2.12 The performance of the existing below ground soil strata referred to within this report; is based on a single trial hole excavation and compared with desktop sources including but not limited to the 'British Geological Society' (BGS). These sources generally provide sound interpretation, however local anomalies can occur, and as such we cannot guarantee their accuracy.

- 2.13 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 or his agent 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.

3.0 GENERAL DESCRIPTION OF THE SITE AND BUILDING

3.1 The building is a small single storey, traditionally constructed, rectangular shaped farm building situated on a level site in a rural area east of Whittlesey in Cambridgeshire. The building is close to the Whittlesey Dike drainage dyke.

3.2 The building has been formerly used for agricultural offices.

3.3 The original construction date of the property is unknown, but it is likely to be late C19 – early C20. The property is understood to be generally in its original format.

To the best of our understanding and belief the property is not Listed.

3.4 The general construction of the building under consideration consists of; -

Roof

Corrugated asbestos cement sheeting supported on a presumed roof structure of a traditional hand cut roof consisting of principal collar tied frames supporting purlins and rafters.

External Walls

Predominantly low level dwarf masonry of painted 230mm thick solid fully bonded brickwork supporting a timber clad timber framed structure with an internal plaster boarded lining construction.

Internal Walls

Lightweight studwork partition walls.

Ground Floor

The ground floors are presumed to be suspended timber joists with timber boarded finish.

Foundations

A trial hole was excavated to expose the existing foundations which were confirmed to be a reasonably deep corbelled brick strip footing formed on to a firm clay strata.

- 3.5 Published Geological records show the building to be within an area where the soil sequence consists of a solid formation of Oxford Clay formation at depth overlain by superficial drift deposits of Barroway Drove Beds of clays and silts (known as Tidal Flat Deposits).
- 3.6 There are no mature trees in close proximity to the building.

4.0 OBSERVATIONS AND COMMENTS

- 4.1 The geological map shows the sequence of stratum in this area to be predominantly tidal flat deposits of clays and silts known as Barroway Drove Beds(BDB) overlying a solid formation of Oxford Clay. The Barroway Drove Beds can be variable in consistency due to the nature of deposition.. Historically the BDB are known to provide a reasonably good foundation bearing strata with bearing pressures in the order of 75kN/m².
- 4.2 The low level dwarf walls showed no signs of significant cracking normally associated with foundation movements and consequent distortion of the building.
- 4.3 The foundations exposed in the trial hole consisted of a three tiered brick corbel formed on a firm grey/brown clay thought to be the Oxford clay formation due to its colour at a depth of approximately 900mm below existing ground level.
- 4.4 The exposed timber cladding showed significant weathering and decay with no signs of recent maintenance.
- 4.5 The corrugated roof sheeting appeared to be sound but would need to be removed in any conversion project.

5.0 DESK STUDY

- 5.1 The proposals for the conversion of the building calls for removing the unsuitable existing timber framed structure and to replace it with an updated structure to satisfy current Building regulation requirements both Part 'A' and thermal requirements. The intension is to slightly increase the height of the building with a new better quality of insulated timber frame structure with a tiled roof structure supported on the existing retained low level dwarf walls and consequently the existing foundations.
- 5.2 To achieve this we have evaluated the load carrying capacity of the foundations and the underlying load bearing strata by comparing the current applied loading with the proposed additional loading.
- 5.3 Our evaluation of the current loading equates to a ground bearing pressure in the order of 26kN/m^2 .
Our evaluation of the proposed loading equates to a ground bearing pressure in the order of 30kN/m^2 .
No current testing has been carried out on the underlying strata but from previous knowledge of this soil sequence we estimate that the allowable ground bearing capacity of the exposed firm clay is in the order of 75kN/m^2 giving a factor of safety of 3 against shear failure.
- 5.4 We conclude that the above evaluation shows that the foundations are satisfactory to support the small amount of additional loading from the proposed building improvements.

Ellfield (Structural) Limited



Mr J Ellington B Sc., C.Eng., M.I.Struct.E., FRSA.

APPENDIX A – PHOTOGRAPHS



PHOTO No. 1 – FRONT ELEVATION



PHOTO No. 2 – REAR ELEVATION



PHOTO No. 3 – SOUTH GABLE ELEVATION



PHOTO No. 4 – NORTH EAST ELEVATION



PHOTO No. 5 – SOUTH-WEST ELEVATION



PHOTO No. 6 – TRIAL HOLE EXPOSING CORBELLED FOUNDATIONS



**PHOTO No. 7 – SPOIL FROM TRIAL HOLE SHOWING FIRM
BLUEY GREY/ BROWN SILTY CLAY FROM FOUNDATION
FORMATION LEVEL**