

STRUCTURAL APPRAISAL



Project:

3440 – Costells Stables, Church Road, Scaynes Hill, RH17 7NH

Client:

Mr James Lancaster

Quality Assurance

Report Title: Structural Appraisal

Project: 3440 – Costells Stables, Church Road, Scaynes Hill, RH17 7NH

Client: Mr James Lancaster

Date: 8th March 2024

Revision: V1 – First Issue

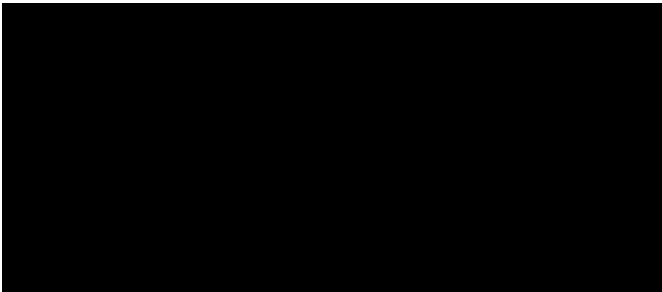
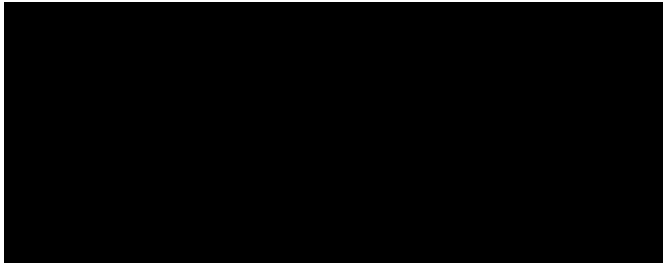


Table of Contents

1	Introduction	4
2	Limitations	5
3	Site Description	6
4	Description of Barns	7
5	Site Observations	10
6	Conclusions	11

1 Introduction

Frith Blake Consulting Ltd were instructed to undertake a structural appraisal of 2 No. buildings located at Costells Stables, Church Road, Scaynes Hill, RH17 7NH. The purpose of the appraisal is to establish the suitability for conversion into residential dwellings.

An aerial photograph showing the Straw Barn and Stable surveyed, together with reference names is included below.



Fig 1 – Aerial Photograph of site

We have prepared this report based on a visual appraisal of the structure. The purpose of this appraisal is to undertake a Structural Survey of the above buildings within the client's ownership to investigate the existing structures to determine if the properties are structurally robust in order to be converted into a domestic dwelling(s) and understand this will be submitted to Mid Sussex District Council in support of a new planning application:

2 Limitations

This report is based on an appraisal of elements visible from ground floor level externally and internally. Additionally, internal finishes, livestock and stored materials covered other elements preventing a detailed inspection, particularly within the stables. We can therefore not accept responsibility for items which were not seen at the time of the inspection, nor made aware of. Access at high level was not possible in all areas, nor were there any intrusive investigation works to determine the extent and condition of foundations or concealed structures.

This report is based on conditions which were apparent at the time of our inspection on 8th February 2024. We cannot accept responsibility for conditions which may occur at other times. The appraisal is not intended to form a detailed schedule of all required repairs, but to highlight the overall condition of principal structural members and the viability of the proposed works.

The appraisal covers structural aspects of the buildings only and comments made on any other aspects are noted for information only and should be verified by a specialist in that particular field. Any other issues noted within the report are for information only and should not be relied upon.

This information is provided for the sole use of the named client and is confidential to them and their professional advisors. No responsibility to other parties will be accepted.

Recommendations made in this report represent the views of Frith Blake Consulting Ltd acting as Chartered Structural Engineers with over 20 years relevant experience in the assessment of agricultural buildings.

3 Site Description

3.1 Site Location:

- The site is located off Church Road, Scaynes Hill, approx. 3.5km east of Haywards Heath
- The nearest postcode for the site is RH17 7NH;
- The approximate National Grid Reference to the centre of the site is TQ 36983 23793

The location is indicated on the below images:

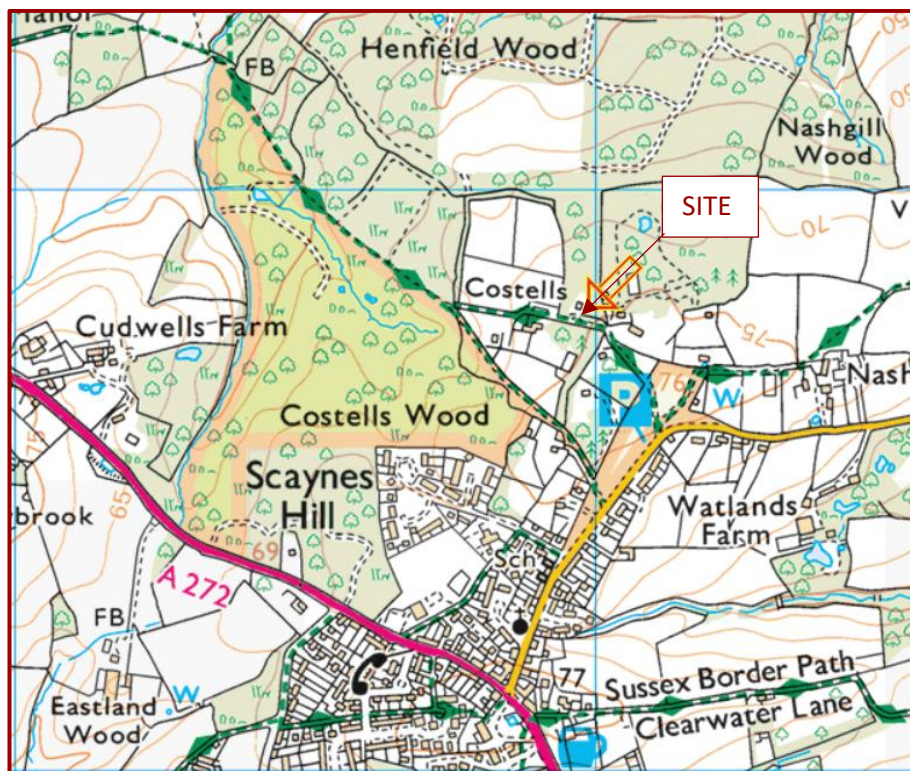


Figure 3.1 Site Location Plan

3.2 Existing Site Description:

Access to the site is made via a shared access & private road off Church Rd to the north, leading to the property Costells. The straw barn and stables are located on the right hand side approximately 250m on the right hand side.

The track extends up to the straw barn with the front access to the site being fenced off and gated providing a small yard area to the front of the barn and stables. The stable frontage consists of the small area of concrete yard, laid to falls to wards existing gullies and drainage channels.

The barn and stable has a small paddock / grassed area to the rear and side of the straw barn (west and north). Beyond the grassed enclosure extends a small coppice and woodland

providing the boundary to the west, north and east with further gardens and pastures beyond. The southern boundary is the main access track with further woodland and properties beyond.

3.3 Proposed Development:

The application proposes the conversion of the barns into dwellings. At the time of writing the report the proposed layouts are not available and so only the main principles of conversion will be discussed.

There are no significant alterations envisaged that will affect the structural integrity of the existing frames. A limited number of new openings to the elevations are likely, as is the installation of insulation and internal lining to the roofs and walls.

4 Description of Barns



Fig 4.1 – Aerial Photograph of site

Straw Barn:

The existing building is located to the west of the existing stables and sit relatively central within the site boundary.

The straw barn a mono-pitched structure consisting round timber posts forming two bays with intermediate studs and rails supporting the timber side cladding being ship lap boarding.

The roof structure is formed with principal softwood timber rafters, supporting intermediate purlins. The roof is clad with steel cladding panels.

The front elevation is partly enclosed with a pair of timber gates and open above.

The western elevation has a ramped access to the rear with a pair of double personnel doors providing access to a secure storage area, partitioned off from the main front access by an internal partition wall being timber frame, of similar construction to the side walls.

All walls and columns are constructed off the existing floor slab which is typically a mass concrete slab and does not appear to show any signs of stress.

It would appear the slab acts as a raft slab without the provision of further foundations. It is unknown if the slab contains reinforcement and the thickness could not be verified.

General photographs are included below:



Photo 1 – North Elevation of Straw Barn



Photo 2 – West Elevation of Straw Barn



Photo 3 – South Elevation of Straw Barn

Stables:

The existing stables are located along the eastern boundary and immediately adjacent to the straw barn.

The stables form an L-shape on plan providing 4 individual stables, with a timber framed internal wall and rafters above. The rafters in turn provide support to the roof structure being a fully sheathed OSB roof with a lightweight corrugated cladding panel.

The external envelope of the stables are timber framed walls with additional panelling internally, typically up to 1m above floor level to protect the walls from damage by the horses, but to the partition walls this extends to the full height.

Externally, the walls are clad with interlocking ship lap timber panelling with a stable door and occasional window to each stable along one side beneath the canopy.

All walls are constructed off the existing floor slab which is typically a mass concrete slab and does not appear to show any signs of stress.

It would appear the slab acts as a raft slab without the provision of further foundations. It is unknown if the slab contains reinforcement and the thickness could not be verified.

General photographs are included below:



Photo 4 – North Elevation - Stable



Photo 5 – South and West Elevation - Stable



Photo 6 – Typical Internal View of Stable

5 Site Observations

Both barns appear to have been relatively well maintained and protected from the elements historically and as a result the buildings are in good condition.

The principal structures and individual elements are not displaying any significant vertical or lateral displacement indicating the buildings are performing adequately in their current forms.

The principal structures are for the most part fully covered and therefore have performed adequately with resistance to the elements. The roof of each building is permanently covered and well maintained, with little sign of deterioration to the principal structures or cladding.

External elevations are all in good condition with no sign of significant deterioration.

The stables are currently used for housing livestock (horses) and the straw barn is used for storage of, straw, animal feed and machinery. Under these uses the buildings are accommodating loads in excess of 2.5kN/m² to the floor areas to the stables and potentially up to 5kN/m² to the straw barn. There does not appear to be any sign of settlement within the slab areas or wall construction to any of the buildings, suggesting the areas to be performing well.

Currently the stability of the stables is provided by the rigidity of the timber framed walls and roof structures being fully sheathed. Where the stables are partially sheathed with heavy duty panelling, this in conjunction with the external boarding will provide the necessary resistance to wind loading and racking.

The stability of the straw barn and store is primarily provided by the rigidity of the timber framed walls and steel cladding to the roof structure. The side walls also have high level knee braces within the timber frame offering additional resistance to wind loads and racking.

Drainage of surface water is collected from the roof discharging direct onto the ground and yard slab which is in turn drained via a gully and channel drains to the building frontages and yard areas. The rear of the properties simply discharges to ground onto the permeable grassed areas. These should be connected to a formal drainage system to provide future protection and longevity of the structures.

6 Conclusions

The existing barns are all generally in good condition. There are no signs of significant vertical or lateral displacement indicating that the foundation slab, walls and principal structures are all performing adequately.

We can confirm that none of the existing structures will be required to be replaced as part of the proposals.

We consider that the installation of infill wall panels to close off the existing openings, insulation and internal lining are reasonably necessary to convert the buildings into dwellings in order to ensure compliance with current Building Regulations. Using lightweight materials supported on new internal walls to divide areas into habitable spaces will transfer all new loadings onto the existing floor slabs and place no additional loadings onto the original structural frames. Thus, a comparison of the weights of the proposed materials are such that the loadings applied to the existing slabs will be comparable to the existing and will therefore place no significant additional load on the existing structures.

Due to the above there will not be a significant increase in the vertical loads transferred to the existing foundations from the installation of insulation and internal linings or walls. The existing foundation slab will have been dictated by the existing uses and therefore the loadings generated by use of a domestic property should not affect the existing slabs / foundations.

The existing concrete floors may be suitable to be retained. Given the former uses and loadings, they will be adequate to support any new loadings for the domestic conversion, including internal walls and linings as stated above.

New openings can be formed in the external envelopes without any consequence to the principal structural elements.

New structural framing and walls will need to be provided internally to form the internal living spaces, however the original timber framed structures will remain largely unaltered and existing walls retained where possible.

External building operations necessary in order to convert the existing buildings into residential dwellings will include (but not limited to) the installation and replacement of windows and doors.

As outlined above, the existing buildings are structurally robust enough to accommodate the loading to undertake these building operations and thus has the potential to be converted to a dwelling.