

28<sup>th</sup> October 2022

Mrs J Barnes  
7 Hadleigh Road  
Elmsett  
Ipswich  
Suffolk  
IP7 6ND

Our Ref: BS/11084  
Your Ref: N/A

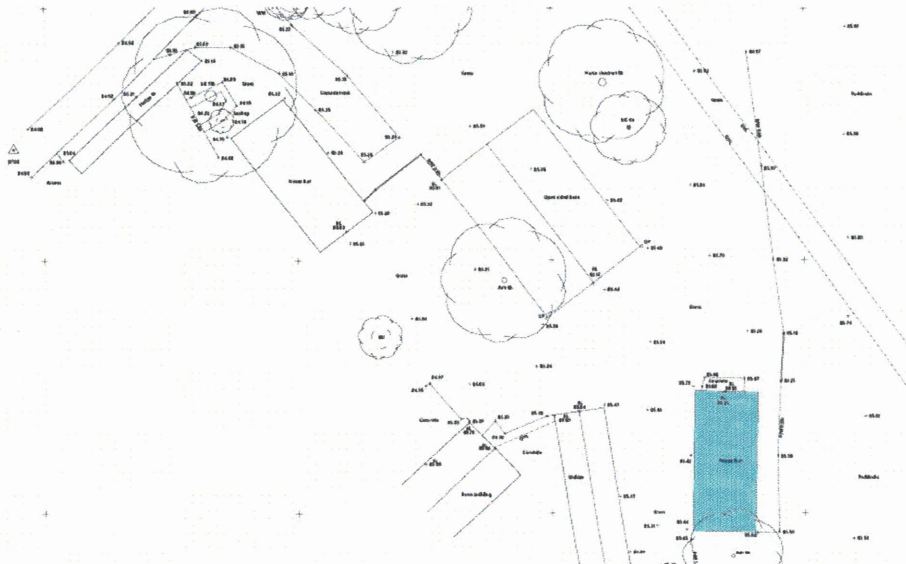
Dear Mrs Barnes,

**Re: Structural Appraisal Report, Proposed Conversion of Existing Agricultural Building, Swallow Lane, Great Bricett.**

As requested, we visited the above property on the 16<sup>th</sup> of August 2022. The purpose of the visit was to undertake a visual inspection of the structure to the existing agricultural building to enable an assessment to be made regarding its suitability for the proposed conversion to residential. Following our visit, we report as follows:

**Scope and limitations**

Our inspection and the contents of this report are confined to the existing agricultural building as highlighted on the plan below.



Our visual inspection was undertaken from ground level.

We have not inspected those parts of the structure that were covered, unexposed or inaccessible, and as such we are unable to confirm these areas are free from defect. We have not inspected the foundations to the existing agricultural building, which as such are beyond the scope of this report.

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

### Observations and comments

The existing agricultural building is a former Nissen Hut, measuring approximately 11.2m in length, 5.0m in width, with a maximum height of 3.2m.

Prior to our arrival on site a single sheet of profiled corrugated steel cladding had been removed internally. The existing structure was found to comprise 45mm x 45mm 'T' shape steel hooped frames, supporting 50mm x 75mm timber purlins which in turn support the external cladding, comprising profiled corrugated steel sheets. The steel hooped frames are at approximately 1.8m centres and are bolted down to 150mm thick hollow concrete blockwork, at 225mm above the existing ground level. Internal finishes comprise profiled corrugated steel sheets spanning horizontally between the steel frames. Tension wires have been provided above the inner profiled corrugated steel sheets where they bear onto the flanges of the steel hooped frames.

The outer corrugated steel sheets appear to be in good condition, with no significant corrosion observed. Where exposed for inspection, slight surface corrosion is evident to the steel hooped frames. More significant localised corrosion is evident to the inner profiled corrugated steel sheets.

Some localised lateral movement is evident to the base of the steel hooped frames within the west elevation, where bolted down to the hollow blockwork, resulting in a slight outward lean to the top of the blockwork wall. Generally, however, no significant distortion or lateral movement is evident to the hooped frames or cladding.

The gable walls comprise timber frame, with metal cladding to the external face.

The ground floor comprises cast in-situ concrete. Where visible, no significant cracking was observed.

### Discussions and recommendations

From the limits of our visual inspection the existing steel hooped frames and profiled corrugated steel sheet cladding are generally in good condition and performing satisfactorily without significant distortion. The cause of the localised lateral movement to the base of a number of the hooped frames is unclear at this time, but could be the result of either physical damage as materials are brought in and out of the building, or the result of an outwards thrust at the base of the hooped frames. In either case this localised movement could be resolved through the introduction of a steel bracket, connected to the foundation or concrete floor slab.

In our considered opinion the inner and outer profiled corrugated steel sheets are likely contributing to the strength and stability of the building and would require to be retained.

Noting the localised corrosion to the inner profiled corrugated steel sheets, and the surface corrosion to the steel hooped frames, we would recommend the inner profiled corrugated steel sheets are temporarily removed in full to allow any surface corrosion to the steel hooped frames to be removed. Once complete the steel frames are to be painted with a suitable good quality high build epoxy zinc phosphate primer, to provide a dry film thickness of not less than 200 microns. The inner profiled corrugated steel sheets could then be re-installed, replacing any sheets that have

suffered significant corrosion. The tension wires above the flanges of the hooped frames must also be re-installed.

No additional finishes should be applied to the existing structure. We would propose that any additional internal finishes are applied to non-loadbearing timber frame walls set inside the line of the profiled corrugated steel sheets.

#### Conclusion

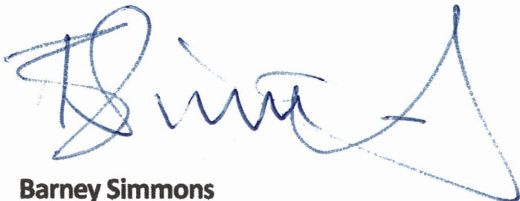
In our considered opinion the existing agricultural building is suitable for conversion to residential. As part of any conversion, the following works should be anticipated:

- Provide steel bracket to the base of steel hooped frames where required.
- Temporarily remove the inner profiled corrugated steel sheets to allow the steel hooped framed to be cleaned and painted with good quality high build epoxy zinc phosphate primer.
- Provide non-loadbearing timber frame walls set inside the line of the profiled corrugated steel sheets to support any additional finishes required as part of the conversion to residential.

All works are to be designed and detailed by a chartered structural engineer.

We trust that the above report meets with your current requirements, however, should you have any queries, or require any further assistance, please do not hesitate to contact us.

Yours sincerely,



**Barney Simmons**

On behalf of Brett Design Partnership Limited