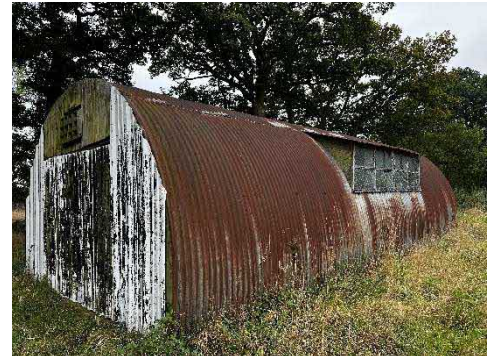

VISUAL STRUCTURAL CONDITION SURVEY OF A NISSAN HUT

Limberlost Farm
Crookham Common
Thatcham

December 2024



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2	1	Hannah Thorogood	E-mail	12 December 2024	Final
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1.0 EXECUTIVE SUMMARY

Archibald Shaw has been appointed to undertake a visual condition survey of the existing Nissen Hut at Limberlost Farm, Crookham Common with a view to supporting the application of change of use from agricultural to residential use.

This follows an inspection undertaken by Archibald Shaw on 07 February 2020.

The existing steel frame is in satisfactory condition and is suitable for reuse as proposed, to residential under class C3. Alterations to gables and elevations can be carried out in accordance with planning guidance under Q1 i)i) aa). New internal structure will be introduced to support ceilings and insulation for residential conversion under the General Permitted Development Order 2015.

2.0 INTRODUCTION

Archibald Shaw LLP has been appointed by Hannah Thorogood to undertake a visual structural inspection of an agricultural Nissen Hut located at Limberlost Farm, Crookham Common, Newbury.

The purpose of the inspection was to consider if the existing building is suitable for conversion to residential use under class Q Permitted Development and to comment on whether the structure is adequate to stand in its own right as the building envelope (save some demolition being carried out to facilitate building operations as permitted).

A visual structural inspection was carried out on 19 September 2024 and was limited to a visual inspection. The report has been compiled without the benefit of a detailed ground investigation or desktop study. The report does not consider the market value of the property, rights of access, tenure or the condition of any agricultural buildings or adjacent structures that do not form part of the proposed development.

This report is for the exclusive use of the Client and should not be used in whole or in part by any third parties without the express permission of Archibald Shaw LLP in writing. Nothing in this report confers or purports to confer on any third party, any benefit or any right to enforce any term of this report pursuant to the Contract (Rights of Third Parties) Act 1999.

This report has been prepared to support an approval application under Class Q of the General Permitted Development Order 2015 (GPDO). Class Q allows for the conversion of agricultural buildings subject to various criteria being met. The National Planning Practice Guidance (NPPG) provides the structural guidance which proposed conversion schemes must comply with:

“Building works are allowed under the change to residential use. The permitted development right under Class Q assumes that the agricultural building is capable of functioning as a dwelling. However, it recognises that for the building to function as a dwelling some building operations which would affect the external appearance of the building, which would otherwise require planning permission, should be permitted. The right allows for the installation or replacement of windows, doors, roofs, exterior walls, water, drainage, electricity, gas or other services to the extent reasonably necessary for the building to function as a dwelling house; and partial demolition to the extent reasonably necessary to carry out these building operations. It is not the intention of the permitted development right to include the construction of new structural elements for the building. Therefore, it is only where the existing building is structurally strong enough to take the loading which comes with the external works to provide for residential use that the building would be considered to have the permitted development right”.

(Paragraph: 105 Reference ID:13-105-20150305)

The guidance allows for various structural works to be carried out so long as the existing building is structurally strong enough to take the loading which comes with the external works to provide for residential use. The guidance, therefore, makes provision for appropriate structural works which facilitate internal works including within the GPDO Part 6 under class A and B, b) any excavation or engineering operations.

The report should not be relied upon exclusively by the Client for decision-making purposes for submission to the local planning authority and may require reading with other material or reports.

Services are provided in accordance with the Association for Consultancy and Engineering Agreements.

3.0 WEATHER CONDITIONS AND RESTRICTIONS

At the time of the inspection, the weather was dry however it is evident from the condition of the roof that the building appears to be weathertight.

This survey covers the southernmost Nissen hut, we have not extended our detailed inspection to other ancillary buildings and outbuildings where present but will merely comment on their overall construction and condition if necessary.

Unless we have stated otherwise our inspection was carried out from within the site boundaries or adjoining areas where there is public access such as roads and public footpaths; this may possibly prevent visual inspection of some areas of the property. Roof areas not visible from ground level, easily accessible flat roofs or with the use of a 3-metre ladder, have not been inspected.

The building is totally open plan and currently used for agricultural purposes and storage, we have not inspected parts of the structure which were covered, unexposed or inaccessible, which would require moving heavy objects, lifting fitted floor coverings, removing wall finishes, or taking down wall or other linings or in any way causing damage to the building or contents.

Even in respect of those areas which have been inspected, latent defects which could not reasonably be identified from a visual inspection, fall outside the scope of this report. However, reasonable care has been taken in indicating where apparent defects may be symptomatic of more serious defects.

The report reflects the condition of the property at the time of inspection and defects can arise following our inspection for which we cannot accept responsibility.

We have not made any legal enquiries, so we are not aware of adverse factors such as any planning that is likely to affect the building. We understand from the Historic England website that the building is not listed.

4.0 DESCRIPTION OF EXISTING BUILDING

The Site

We have consulted Ordnance Survey Maps and other internet sources and have identified that the site was undeveloped up until around the late 1960s when the current Nissen huts were erected, originally seven in total. The hut probably had a former military use and has been a former henhouse, however, it is still in use for agricultural purposes relating to the surrounding land.

The Nissen huts are situated in open countryside along the eastern boundary of a field at an elevation of approximately 110m. The hut in question is the southernmost hut of three structures that currently remain. It is edged to the east by a row of mature trees and beyond the military road accessed off Crookham Common Road. The barn is generally built on the level, but the land slopes gently away to the north.

The British Geological Survey map of Great Britain shows the underlying geology as the superficial deposits of Silchester Gravels overlying the London Clay Formation.

Flooding

We have inspected the Environmental Agency website that gives free information on flood risk. This information related to watercourses and does not have regard to run-off or stormwater flooding (flash flooding is a fairly recent phenomenon which can affect property even if not in a recognised flood zone). As far as we are aware there is no likelihood of flooding under normal conditions.

Orientation

The long elevation of the building is orientated approximately north/south. The prevailing weather comes from the south and west therefore these elevations are more exposed to the elements, although the existing trees to the east provide some sheltering.

The Property

The Nissen hut is rectangular on plan (4.88 x 10.97m) / (16' x 36') and comprises of a single-storey, steel frame, under a curved roof. Longitudinally, the building is divided into six equal bays spaced at approximately 3.66m/12' centres. The frames are constructed from 50 x 40 x 4 mm thick segmented curved steel tee sections joined together with an angled cleat and bolt. The roof which becomes the side walls is formed by a curved profiled corrugated galvanised steel sheeting in a semi-circular shape. The roof appears to be double-skinned with two sheets of corrugated sheeting perpendicular to each other separated by a timber purlin. The gable walls are covered in vertical metal corrugated cladding supported on a timber frame.

There is a dormer window on the west-facing elevation formed between two middle bays.

The ground floor slab is concrete and bears directly on the ground.

5.0 VISUAL OBSERVATIONS

The structure appears to remain largely as first erected with the steel framing supporting the timber purlins, which in turn support the cladding sheets. The cladding externally has clearly suffered weathering to large areas with flaking of the externally applied paint, exposing areas of corrosion to the steel surface on all elevations.

The principal structural elements of the steel frame are in satisfactory condition although they have extensive surface corrosion/pitting, there is, however, no apparent significant loss of section.

The timber purlins whilst concealed by the secondary sheeting appear satisfactory as there are no noticeable signs of bowing or deflection externally.

The strength and rigidity are afforded to the frame by its arch construction and longitudinally by diaphragm action of the roof sheeting.

6.0 DISCUSSION

The structure was originally erected to perform a function without necessarily following any particular structural standards and has subsequently been used for general agricultural purposes and storage. It is therefore of no real benefit to assess its adequacy in terms of how it is likely to compare with a structure designed to current standards. A commentary on its stability and capacity to carry load would seem the most informative approach to an assessment of whether it can be retained as part of the proposed conversion.

The roof covering is expected to be refurbished to ensure adequate weather-tightness and enhanced with thermal insulation. The main impact on the structure would be a potential increase in load on the roof, resulting from a heavier replacement covering, which will need to incorporate insulation and ceiling boarding to meet the current requirements. However, the proposal to introduce additional walls within the building would allow additional support to be provided to reduce the overall span of the frames and thereby ensure that even with increased loads the moments and forces in the sections would not be increased. Alternatively, an approach could be taken of a built-up roof profile where the existing frames support the profiled cladding, which will be of a similar weight to the original steel corrugated sheeting, with the insulation and ceiling boarding supported independently on a secondary structure spanning between the new internal cross walls.

If the existing purlins are found to be inadequate, they will need to be replaced on a like-for-like basis, with additional purlins introduced as necessary.

It will also be necessary to provide improved airtightness and insulation to meet current Building Regulations, this can be done with insulated lining walls, faced with plasterboard. The introduction of internal partitions will also allow the provision for lateral stability to be improved to the point where the superstructure will be adequately braced and capable of sustaining the dead and imposed loads which a residential building will need to be designed for.

The floor slab appears to be sound with no sign of significant settlement or movement and can be retained, providing a stable base for the refurbished cladding system. It is however unlikely that it will have any insulation or a damp-proof membrane, which will be a requirement of the current regulations. With the clear height available to the underside of the frames it will be possible to apply a new membrane over the existing slab with insulation and a screed finish, avoiding any disturbance to the slab itself and the support of the original steel frames.

The introduction of new glazing and openings in the external elevations will not compromise the stability of the structure as it is envisaged substantial lengths of each of the long elevations remain, which will continue to brace and restrain the steel frames.

Any areas of damage and localised corrosion to isolated areas of the framing can be addressed readily within the scheme with local repairs and replacement any sections of steelwork that is beyond repair by releasing at the nearest bolted joint and renewing the particular section. The remaining areas of the steel frame are likely to require further protection with a remedial brush-on primer and rust inhibitor before any paint finish is applied.

Any corrosion at the base of the frames due to water ingress which could not be reasonably identified from our inspection can be repaired with new steel sections spliced to the existing, the renewal of the lowest of the sheeting rails at this point is likely to be required. This can be done once the existing cladding has been stripped with temporary propping to ensure the frames remain fully supported during this repair.

Currently, the rainwater discharges to the base of the wall and percolates into the surrounding soil. It would be unfeasible to introduce guttering other than to the dormer and therefore to divert water away from the property, it would be sensible to introduce a collector drain at the base of the wall which can discharge to a new soakaway some distance away from the property.

7.0 CONCLUSIONS

Based on our inspection of the existing structure, it is clear that the conversion can be carried out without extensive alterations to the principal structural elements. The existing external cladding will be retained and, where necessary, repaired or maintained, without compromising structural stability. The existing structural frames can be kept in place without significant reconstruction, using straightforward methods that pose minimal risk and will not disturb the remaining load-bearing elements. New roof insulation and ceilings will need to be supported by a secondary support arrangement from the new internal structure. All existing steelwork will need to be exposed, thoroughly rubbed down, prepared, and painted with a proprietary primer to ensure ongoing corrosion protection.

The structure lends itself readily to residential conversion. The original structural framing can be retained and there are no obvious signs of significant ground movement or instability within the floor slab or supporting masonry structures. As such there would appear to be no requirement for extensive demolition or replacement and the scheme as designed will incorporate the existing structural fabric, within the original footprint of the building.

Provision for rainwater collection at the base of the wall should be considered and discharged to new soakaways located some distance away from the building.

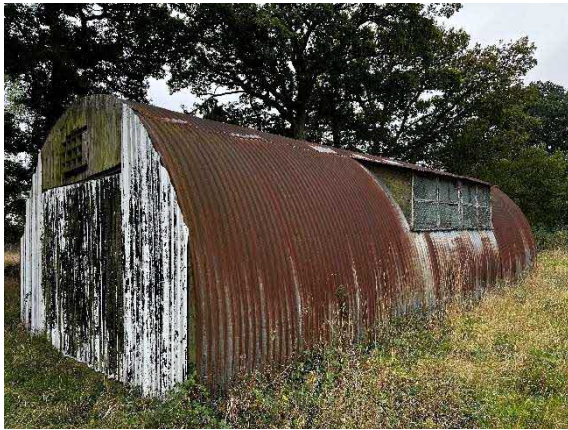
Prepared by

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Date 12/12/24

Appendix

Photographs



Photograph 1 –West Elevation



Photograph 2 –East Elevation



Photograph 3 –North Elevation



Photograph 4 –South Elevation



Photograph 5 –Spare Nissen Hut Frames



Photograph 6 –Internal View