

Heritage Impact Assessment

For: Ld O'Neill Estate

Studley House Farm, Studley Lane, Calne,
Wiltshire, SN11 9LL

Prepared by Fisher German LLP

Client:	Ld O'Neill Estate, c/o Fisher German LLP
Property Address	Studley House Farm, Studley Lane, Calne, Wiltshire, SN11 9LL
Job Number	133434-016
Image	

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1 Executive Summary

- 1.1.1 Fisher German have been instructed by Ld O'Neill to undertake repairs to Studley House Farm and to seek Listed Building Consent where applicable to those repairs
- 1.1.2 The application is wholly repairs and seeks to deliver repairs which are correctly specified with regard to the historic nature of the property.
- 1.1.3 The proposed works are intended to reverse areas of dampness within the building in addition to the stabilisation of some movement within the garage.
- 1.1.4 The farmhouse is part of a let estate and the work is required to allow it to be returned to a good tenable condition.
- 1.1.5 The aims and objectives of this report are to assess the significance of the farmhouse and any other affected Heritage Assets, describe and justify the proposed works, and describe the heritage impact of the works, along with any further mitigation measures if applicable.
- 1.1.6 The proposed works should not change the mass or impact of the building with respect to its setting and in this regard should not change or impact the way that the structures are grouped or viewed.
- 1.1.7 The works should not detract from the character and setting of the building and the use of lime and breathable materials within the repairs will provide for the longevity of the heritage asset.
- 1.1.8 It is not proposed to extend or alter the external appearance of the property.
- 1.1.9 The work is designed to retain historic fabric to the greatest extent possible.

2 Instructions and General Matters

2.1 Client

Ld O'Neill Estate, c/o Fisher German LLP

2.2 Consultant

Fisher German LLP, The Estates Office, Norman Court, Ashby de la Zouch, Leicestershire, LE65 2UZ.

2.3 Property/Site

The premises discussed in this report is Studley House Farm, Studley Lane, Calne, Wiltshire, SN11 9LL.

2.4 Third Parties

The report is prepared for the sole use of Ld O'Neill Estate and the liability of Fisher German LLP does not extend to third parties.

2.5 Property/Site

The subject of this report is Studley House Farm, Calne Wiltshire. SN11 9LL

2.6 Drawings

The application drawings that this Heritage Impact Assessment relate, are as follows and are included in Appendix E:

2.7 Information Sources

The following sources of information were consulted to inform our assessment.

- National Library of Scotland for historic Ordnance Survey Plans.
- General desktop research.
- Site inspection of the building undertaken in July and August 2025.
- The Estate Records
- Historic England, Farm Buildings at Studley House.
- Pevsner, Nikolaus — The Buildings of England: Wiltshire.
- The structural Engineers report.

2.8 Limitations to Inspection

This Heritage Impact Assessment is prepared in accordance with paragraph 200 of the National Planning Policy Framework, requiring applications to the Local Planning Authority to describe the significance of any heritage asset affected, including contribution made by their setting, with the level of detail proportionate to the assets importance and no more than is sufficient to understand the potential impact of the proposal on their significance.

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Building lasting value, *together*

3 Heritage Assets Affected by the Proposed Works

3.1 Studley House Farm

The proposed works are to Studley House Farm. A detached Farmhouse

List Entry Number: **1240044**

Listing: Grade II

National Grid Reference:

ST 96978 71875

ST 97 SE CALNE WITHOUT STUDLEY LANE

Farmhouse, late C18 altered early C19, rubble stone with stone slate roof, ashlar east end and ridge stacks, brick west end stack. Two storeys, 4-window range. Three first floor 16-pane sashes with timber lintels and one 9-pane sash. Centre date plaque 1875. Ground floor left canted 8-12-8-pane timber bay window, blocked window, C19 ashlar gabled porch, French windows, blocked window and 16-pane sash. North-west projecting wing, former cheese-room and dairy with casements and evidence of alterations. Date plaque refers to ownership of Earl of Crewe to whom the Studley House estate passed from the Hungerford family. Farmhouse adjoins site of Studley House recorded as owned by Norborne family in 1611 and Hungerfords from late C17, burnt down c1800.

Listing NGR: ST9697871875

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4 Historical Evaluation

4.1 Historical Background

- 4.1.1 The farm house is a traditional stone built farm building which was rebuilt in its current form following a substantial fire in the early 19th century.
- 4.1.2 The date plaque on the North elevation indicates 1815 and this relates to the rebuilding following the fire.
- 4.1.3 It is likely that there are parts of the fabric within the core of the building which predate the rebuilding exercise in 1815. These are difficult to discern given the finishes and decorations but some of the chimneybreasts particularly the one in the kitchen is likely to be older.
- 4.1.4 There is a good deal of original 19C joinery remaining in the building including the window shutters, panelling and staircase.
- 4.1.5 The walls contain a mixture of earthen fill which is still widely present beneath some of the later pointing visible.

4.2 Historic Building Appraisal

- 4.2.1 The works within the application are solely aimed at the preservation of fabric and repair.
- 4.2.2 There is evidence internally that more modern gypsum plasters have been used to repair the walls and in some of these areas there is evidence of dampness. Where plaster is to be removed it is the newer Gypsum and not original lime which is targeted.
- 4.2.3 The Garage building has a significant defect in the separation of the wall and floor which is the subject of separate analysis by a conservation accredited engineer. The report is appended to this document.
- 4.2.4 The external walls have suffered due to leaking rainwater goods. The majority of these have Asbestos content and it is our intention to remove these to allow a high-capacity cast gutter to be installed.
- 4.2.5 The walls have been repointed in part using a cement based mortar which is incompatible with the earthen clay fill visible beneath.
- 4.2.6 There are no proposed changes to the form or layout of the building.

5 Significance of Heritage Assets Affected by the Proposed Development

5.1 Introduction

5.1.1 Historic England's website states that Listing marks and celebrates a building's special architectural and historic interest and brings it under the consideration of the planning system so it can be protected for future generations.

- Grade I buildings are of exceptional interest, only 2.5% of listed buildings are Grade I
- Grade II* buildings are particularly important buildings of more than special interest, 5.8% of listed buildings are Grade II*.
- Grade II buildings are of special interest. 91.7% of all listed buildings are in this class.

<https://historicengland.org.uk/listing/what-is-designation/listed-buildings/#Categories>

5.1.2 Significance is a term defined in the National Planning Policy Framework as being 'the value of a heritage asset to this and future generations because of its heritage interest. Such interest may be archaeological, architectural, artistic or historic' and it may derive not only from a heritage asset's physical presence, but also from its setting.

<https://www.gov.uk/guidance/national-planning-policy-framework/annex-2-glossary>

5.1.3 The principles of selection of Listed Buildings can be seen in the document by Department for Digital, Culture, Media and Sport entitled Principles of Selection for Listed Buildings.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/757054/Revised_Principles_of_Selection_2018.pdf

5.1.4 Further information regarding asset type can be reviewed by accessing the same on the Historic England website. <https://historicengland.org.uk/listing/selection-criteria/>

5.1.5 In defining significance, we have referred to guidance within the English Heritage publication, Conservation Principles Policies and Guidance, published 23 April 2008, summarised as;

- *'Evidential value' derives from the potential of a place to yield evidence about past human activity', with this value being 'proportionate to its ability to contribute to people's understanding of the past.*
- *'Historical value' derives from the ways in which past people, events and aspects of life can be connected through a place to the present.*
- *'Aesthetic value' derives from the ways in which people draw sensory and intellectual stimulation from a place*
- *'Communal values' derive from people's identification with the place*

<https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/>

5.1.6 In describing the impact upon setting of heritage assets, we have followed the '5 step process' within the Historic England document entitled 'The Setting of Heritage Assets – Historic Environment Good Practice Advice in Planning Note 3 (Second Edition), summarised as;

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- 1) Identification of the heritage assets affected and their settings
- 2) Assessing whether, how and to what degree these settings contribute to the significance of the heritage assets affected.
- 3) Assessing the effect of the proposed development on the significance of the assets
- 4) Maximising enhancement and minimising harm
- 5) Making and documenting the decision and monitoring outcomes.

<https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/>

5.2 Significance of Studley House Farm and Stables

- 5.2.1 Studley House Farm is an important building within the landscape surrounding Calne. It is in a prominent position and can be seen from the south overlooking the surrounding area.
- 5.2.2 The building has an inexorable link with the village and connects with the social and economic history of the area for a number of centuries.
- 5.2.3 The property is Grade II listed, classified as being 'of special interest'.

Evidential Significance

Evidential value' derives from the potential of a place to yield evidence about past human activity', with this value being 'proportionate to its ability to contribute to people's understanding of the past

- 5.2.4 The evidential significance of the Farm and its ancillary buildings is high.
- 5.2.5 There have been few changes in the format and layout since it was repaired in 1815, Some of the internal fittings are original and the property may contain elements of the former building predating the fire.

Historical Significance

Historical value' derives from the ways in which past people, events and aspects of life can be connected through a place to the present.

- 5.2.6 The historical significance of Studley House Farm is fair. The construction and style of construction is apparent and some of the original features remain.

Aesthetic Significance

Aesthetic value' derives from the ways in which people draw sensory and intellectual stimulation from a place

- 5.2.7 The aesthetic significance of the farm is fair. The ancillary parts of the structure have been changed including a Garage door addition into part of the Northern outbuilding. This was likely a barn or stabling prior to conversion

Communal Significance

Communal values' derive from people's identification with the place

- 5.2.8 The communal significance of the stable yard is in its link to the estate and the farming which was undertaken both socially and physically

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Building lasting value, *together*

- 5.2.9 The farms on an estate form a link between the gentry and their tenants. The construction and layout is socially important .

Setting

- 5.2.10 The farmhouse sits to the South of a range of buildings many of which were added in the 20th century. However the setting allows views across the valley and provides context for the work carried out on the estate.

6 Proposals

6.1 Introduction

- 6.1.1 The proposals are entirely linked to the repair of the fabric to allow the building to be relet and to preserve the fabric in an appropriate way.
- 6.1.2 The LBC concerns only the Farmhouse
- 6.1.3 The proposed works are:
- Removal of gypsum plasters
 - Replacement of Asbestos gutters
 - Repair to the stonework
 - Pointing to elevations
 - External Joinery repairs
 - Structural repairs to tie the walls to the floors.
- 6.1.4 Some of the repairs to the building do not require listed building consent in their own right but have been included to provide a total picture of the works to be undertaken.

7 Impacts of Proposals on Significance

7.1 Impact on the Farmhouse

Evidential Significance

- None of the work should affect the evidential significance as there is no removal of historic fabric proposed.

Historical Significance

- 7.1.1 The historical significance of the Farmhouse comes primarily from the link it has to social and economic history at the time it was rebuilt
- 7.1.2 The works to the property will have no impact on the historical significance of the property.

Aesthetic Significance

- 7.1.3 The works proposed will only improve the aesthetics with careful lime pointing, cast gutters and repairs to the joinery

Communal Significance

- 7.1.4 The works will not alter the communal significance of the building.

7.2 Impact on setting of surrounding assets

- 7.2.1 In our opinion, the proposed works will have little impact on the setting of surrounding assets. The changes proposed will look very similar following the conversion works.

7.3 Impact on Below Ground Remains

- 7.3.1 There is some work to drainage planned but this is to repair along the existing runs and will be in already disturbed trench lines.

8 Conclusion

In our opinion, the proposals represent less than substantial harm to the significance of the Farmhouse. The benefits of the scheme will allow for the careful and proportionate repair of the fabric using appropriately considered materials.

The proposals will have no impact on the setting and significance of surrounding heritage assets.

In our opinion, the proposals meet the objectives in paragraph 190 of the National Planning Policy Framework as setting out a positive strategy for the conservation and enjoyment of the historic environment.

Paul Brown BSc (MRICS) Conservation Accredited

For and on behalf of Fisher German LLP

18 December 2025



Consulting Civil,
Structural, Highway and
Transportation Engineers

**Structural Appraisal
of
Studley House Farm**

**for
Fisher German**

**Ref:
W10176-GCA-RP-S-0001-S2-P01**



**Release Date of Report:
November 2025**



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Structural Appraisal

Studley House Farm

1.0 INTRODUCTION

1.1 Brief

101 We were instructed to carry out a structural inspection at Studley House Farm to assess the condition of specific outbuildings and agricultural structures. The inspection was commissioned following concerns regarding structural movement and material deterioration.

102 The Brief The primary scope of the instruction was to investigate four specific structural issues identified by the client:

- (a) **The Garage:** Investigation of a significant gap between the wall and floor in the room above the garage, indicating potential movement of the external wall.
- (b) **Barn 1 (Storage Barn):** Investigation of progressive movement observed at the corner of the large barn.
- (c) **Barn 2 (Plucking Barn):** Inspection of a failing primary beam bearing where it enters an external wall.
- (d) **Barn 3 (Chicken Barn):** Assessment of a damaged truss and timber post within the agricultural outbuilding.

The purpose of this report is to detail the observations made during the site visit and provide commentary on the structural form of the buildings. Where the causes of defects are identifiable, this report provides conclusions regarding their likely origins and structural significance. Accordingly, appropriate initial remedial proposals are outlined to address stability and durability concerns.

2.0 Property Description and Statutory Status

201 The main farmhouse is Grade II listed, described in the Historic England listing as a late 18th-century farmhouse, altered in the early 19th century. It is constructed of rubble stone with a stone slate roof, featuring an ashlar east end and ridge stacks. The property history indicates connections to the Norborne family (1611) and the Hungerford family (late 17th century), with the original Studley House having burnt down circa 1800. A date plaque of 1875 refers to the ownership of the Earl of Crewe.

202 From BGS (British Geological Survey) maps, the expected soil geology will be Hazelbury Bryan Formation – Sandstone, but there are areas of Oxford Clay Formation – Mudstone close by. No superficial geology is provided.

3.0 Notes and Comments

- 301 The purpose of this report is to detail the observations made during the site visit and provide commentary on the structural form of the buildings. Where the causes of defects are identifiable, this report provides conclusions regarding their likely origins and structural significance. Accordingly, appropriate initial remedial proposals are outlined to address stability and durability concerns.
- 302 We have not investigated the presence of asbestos or other non-structural elements, nor have we inspected for biohazards, including invasive non-native plants. Additionally, we have not inspected the electrical and mechanical installations. Our inspection of the property will only check for visual evidence of damp.
- 303 The internal inspection has been made within the limits of ready accessibility and it is not normal practice to lift floor coverings or floorboards, 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 it is neither implied nor should it be construed that other parts are free from defect or that they have not suffered from insect or chemical attack.
- 304 Roof spaces were not visually inspected.
- 305 Our inspection of the drains has been limited to the raising, where practical, of visible inspection chamber covers/an inspection of the drains did not form part of our brief.
- 306 This report does not constitute a Homebuyers Report, Valuation or Schedule of Refurbishment, and the lack of specific reference to any structural elements, materials or type of construction does not infer compliance with the current British Standards, Codes of Practice, or Building Regulations, and enquiries to the Local Authority have not been made.
- 307 The inspecting Engineer has not investigated the extraction of minerals, and we recommend that the appropriate searches be made.
- 308 The property and site have not been tested for any form of contamination, pollution, or other environmental impairment, including the presence of invasive non-native plants. We are unable to comment on this matter.
- 309 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 property will be free from future defects or that existing ones will not suffer from further deterioration.
- 310 Unless otherwise stated, left and right are defined as facing the elevation or element and all internal observations in the unlit or dark spaces were made with the aid of a handheld torchlight.

4.0 RISK ASSESSMENT

- 401 **Livestock & Animals:** As an active working farm, livestock (sheep) and loose farm dogs are present on site. All gates must be kept secured to maintain biosecurity. Contractors should exercise caution when working in close proximity to animals to avoid injury.
- 402 **Vermin & Biological Hazards:** Rat holes were identified within the outbuildings. This presents a risk of Leptospirosis (Weil's Disease), transmitted through contaminated soil or water. Appropriate PPE (gloves) and strict hygiene practices must be adopted, particularly during groundworks or drainage repairs.
- 403 There were no other significant structural or civil engineering risks identified on this project, other than those which a suitably competent contractor should be aware of.
- 404 Further risks may be present, and all due precautions should be taken.

5.0 Studley House (Garage)

5.1 Observation



- 501 The garage walls are constructed from a mixture of differing stone types, predominantly fairly thin stones embedded into a fairly thick lime mortar. However, there is widespread evidence of inappropriate repointing undertaken over the years. This manifests as patches of cementitious mortar varying significantly in colour, ranging from very white-beige to sandy brown, a much redder cement colouring, and finally a grey cement.



- 502 Vertical joints are clearly visible in the masonry where at least two previous openings (likely a window and a door) have been infilled. The stonework in these infills has not been "toothed" or lapped into the original masonry, creating a straight vertical joint between the old and new sections.

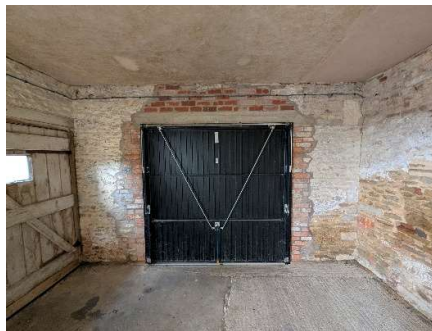


- 503 The most significant structural issue in this area is the stability of the West and East elevations. In the room above the garage, the ceiling is pulling away from the walls. This movement is occurring because the main Oak beams run East-West, which indicates the floor joists run North-South. Consequently, the joists run parallel to the leaning walls and provide no bearing

or lateral restraint. This lack of connection prevents the structure from acting as a rigid diaphragm box.



- 504 Above the garage door, a concrete lintel has been cast in-place; it is difficult to determine if this contains adequate reinforcement. The bearings on either side have been rebuilt in brickwork and cement mortar.



- 505 The brickwork used to infill areas on the East elevation and West elevation appears to have a rougher face (handmade), which is appropriate. However, the bricks used above the timber lintels and garage door are smooth-faced and much harder. This is an inappropriate material choice as it is denser and stronger than the surrounding stone, potentially causing differential movement.



- 506 Minor cracks were noted above the timber lintels for the doorways, along the South East elevation, it appears to be from shrinkage due to the vertical nature, while the cracking in the north elevation is diagonal in nature, and the lintel is bowing significantly.



- 507 There are vertical cracks at the corners indicating they are not toothed in significantly enough.



- 508 The timber bearers buried in the wall, particularly at the southern end on the West elevation, show significant signs of woodworm infestation; the timber has deteriorated to the extent that it sounds hollow and has "burst out" in areas.



- 509 The main "Oak" beams supporting the floor are boxed-in, and looking at the end bearings, there appear to be doubled-up joist members rather than a single solid oak member, as evidenced by the western bearing, where two separate, distinct members are visible. This may be because the original beam has deteriorated and splints have been installed at the bearing.



- 510 The West window reveals significant defects. A vertical crack running down from the West window centre suggests lateral movement, likely caused by the concrete sill shrinkage.



- 511 The brickwork surrounding the west window frame is delaminating due to moisture ingress and significant vertical cracks separating it from the stonework, most likely due to thermal and shrinkage movement. The junction between the frame and brick has been sealed with an inappropriate "polyfilla" foam, which traps moisture.



- 512 The windowsill for the West elevation has been formed by laying cement on top of the original timber, causing the timber underneath to disintegrate. Removal of loose material revealed extensive "frass" (bore dust) and dead wood bugs, indicating the timber frame below has been heavily infested.



- 513 Externally, significant holes were observed in the ground immediately adjacent to the Eastern elevation. These appear to be active vermin holes (rat runs) exacerbated by soil washout. Crucially, these voids coincide directly with the section of the wall that is leaning outwards. This suggests that the shallow foundations in this location may have been undermined, reducing the ground bearing capacity and contributing to the rotational movement of the wall.



- 514 The stonework on the Eastern elevation at the northern end has deteriorated with stonework becoming friable and significant section loss in some of the individual stone blocks.



- 515 The timber lintel externally can be seen that it looks like it was originally rendered in cementitious mortar and that the bearings have suffered historically from wood worm, no visible frass was evident.

5.2 Conclusions

- 516 The inspection of the garage reveals a structure suffering from a combination of historic neglect, inappropriate remedial interventions, and active structural instability.
- 517 The primary concern regarding the East and West elevations is a loss of equilibrium caused by the decoupling of the walls from the floor diaphragm, exacerbated by foundation undermining from vermin activity.
- 518 Furthermore, the widespread use of impermeable cementitious mortars and modern sealants has disrupted the building's ability to manage moisture, leading to accelerated decay in the timber lintels and masonry bedding.
- 519 To arrest this deterioration and prevent potential failure, it is imperative to implement the recommended schedule of works immediately, prioritising the stabilisation of the sub-soil, the installation of mechanical lateral restraints, and the restoration of breathable lime-based materials.

5.3 Recommendations

- 520 **Rat holes:** Investigations should be undertaken to confirm if the vermin activity is current, followed by humane pest control measures. Subsequently, a Ground Penetrating Radar (GPR) survey is recommended to map the extent of the tunnel system. If extensive voiding is confirmed, Geopolymer Soil Strengthening (resin injection) is proposed to fill deep fissures and voids, stabilising the foundations without the need for disruptive excavation. If voiding is not excessive, then move on to lateral restraint.
- 521 **Inspection of First Floor and Roof Structure:** The first floor needs to be made accessible and safe for inspection from above of the floor structure to determine size and condition of members as well as to inspect the roof members.
- 522 **Lateral Restraint:** Install A2 stainless steel lateral restraint straps between the first floor and walls to tie the leaning West and East walls to the floor structure. This may require installing noggins between the existing joists, these are to be D30 oak.
- 523 **Structural Stitching:** Install stainless steel helical bars (e.g., Helifix) at the vertical joints of the infilled openings (extend approx. 500mm L either side of crack) and along the corners (extend approx. 900mm L either side of the crack) to prevent separation.
- 524 **Masonry Repairs:** Remove all inappropriate cementitious mortar, repoint these areas as well as the joints that have degraded with a flexible lime mortar NHL 2.
- 525 **Window Repairs:** Remove all cementitious render on window frames to reveal the underlying timber and the inappropriate polyfilla/foam. Window frame to be inspected by architect and a repair strategy developed with approval from the Conservation Officer. Ensure the window is sealed with traditional Oakum and Burnt Sand Mastic to match the original design intent.
- 526 **Timber Replacement:** Carpenter to Replace the rotten timber bearers buried in the southern wall.

6.0 Barn 1 (Storage Barn)

6.1 Observations



- 601 Barn 1 features an Oak truss structure supporting clay tiles. The trusses are substantial, especially when looking at the tie beams. Wind bracing is present, although members are missing on both the West and East sides, which compromises the longitudinal stability of the roof. The roof lacks a structural ridge beam, relying instead on a ridge board, and the rafters appear to be newer additions.



- 602 A series of cracks were noted, predominantly at the North-East corner. On the Eastern side, the top section of the wall appears dislodged, forming a "ledge" at the northern corner where it bulges outwards. This suggests an eccentricity in the loading is applying a horizontal "push" to the wall tops.



- 603 A large amount of the openings (e.g. doors, windows, etc) have been infilled, in some cases this has been done with stonework to match the existing walls, however in some instances these have been filled in with blockwork including what appears to be one of the previous

main barn doors. From the colouration, it can be seen that there a significant amount of masonry has been extensively repointed with cementitious mortar.



604 Furthermore, there appears to be no positive connection between the heavy trusses and the wall plate; the roof is relying primarily on friction to stay in place.

605 Externally, the crack in the northeast corner can be seen to have developed through the entire wall thickness. The crack is primarily vertical from ground level to chest height before beginning to shift in a diagonal manner. It is also noticeable that there isn't a defined set of quoins at this corner, as one would expect, especially when comparing to the other corners of this building. The northwest corner appears to have been repointed in cementitious mortar and has a larger quantity of dressed stones as the quoins.



606 There is a downpipe that leads into a gully at the northeast corner, it could not be seen if this gully is blocked. It appears that the drainage pipe moves along the north elevation as evident by the manhole. Along this stretch of the north elevation, there is a significant amount of discoloration from base to chest height which would indicate high saturation and given the proximity of the drainage pipe would suggest a broken pipe. The over saturation of the soil could be causing ground movement, or the saturated stonework is subject to freeze thawing and this will cause horizontal movement leading to the crack pattern.



- 607 There are two additional vertical cracks in this corner, these are on either side of the infilled doorway.



- 608 The gutter along the eastern elevation shows signs of movement, but as the gutter is intact this would indicate that the movement is historic.



- 609 At the southeast corner of the building there is a vertical crack at the interface between the quoin and rubble stone wall. The crack is wider at the top which would indicate a slight lean to the top of the wall. This is expected given lack of head restraint.



6.2 Conclusions

- 610 Barn 1 displays clear signs of structural distress resulting from a combination of disconnected structural elements, drainage failure, and inappropriate historic repairs.
- 611 The primary stability concern arises from the lack of a positive connection between the substantial oak roof trusses and the wall plates, combined with the large spacing between the trusses and the absence of any joists between them. This has allowed eccentric roof loads to generate horizontal thrust, pushing the masonry outwards, particularly evident at the northeast and Southeast corners.
- 612 This movement is being actively exacerbated by likely drainage defects at the northeast corner, where soil saturation appears to be undermining the foundation or causing freeze-thaw damage.
- 613 Furthermore, the widespread use of impermeable cementitious mortar is accelerating the decay of the stonework. Immediate remedial action is required to mechanically tie the roof to the masonry, rectify the drainage defects, and stabilize the fractured walls to prevent further outward rotation.

6.3 Recommendations

- 614 **CCTV Survey:** A CCTV survey of the drainage system should be undertaken to determine if any of the pipes are broken and leaking.
- 615 **Wall Stabilization:** Install stainless steel helical bars (e.g., Helifix) at the vertical cracks (extend approx. 500mm L either side of crack) and along the corners (extend approx. 900mm L either side of the crack) to prevent separation.
- 616 **Roof Connections:** Install stainless steel cleats or mechanical fixings to positively tie the trusses to the wall plates.
- 617 **Masonry Repairs:** Remove all inappropriate cementitious mortar, repoint these areas as well as the joints that have degraded with a flexible lime mortar NHL 2.

7.0 Barn 2 (Plucking Barn)

7.1 Observations



- 701 In the Plucking Barn, a ceiling joist has failed completely due to severe woodworm infestation, which is evident throughout the timber framing in this section.



- 702 Of critical concern is the eastern truss bearing. The timber packing and stonework have disintegrated and pulled away, likely due to the deterioration of the timber bearing plate from moisture ingress. Nails in this section show signs of "rust jacking," which has further spalled the stonework.



- 703 The southern appears to have previously failed and a pier was built to support the truss using blockwork.



- 704 There is no access hatch to the roof void, which restricts maintenance capabilities. Signs of rot in the ceiling suggest the roof is no longer watertight.
- 705 There are vertical cracks at the internal corners of the building.



- 706 Externally, a drainpipe terminates effectively nowhere, discharging water directly into the foundation soil causing localized stone damage via erosion but also from the increased saturation of the stonework.



- 707 The lintel above the northern window on the East elevation appears to be a modern replacement (sharp cut edges), this coincides with the newer blockwork pier suggesting the previous lintel failed due to similar water ingress issues seen in the southern tie beam. Additionally, the stonework has been repointed with cementitious mortar.



- 708 The stonework above the window on the east elevation at the southern end, which coincides with the failing southern tie beam bearing is greatly discoloured indicating significant water saturation.



7.2 Conclusions

- 709 The Plucking Barn is in a precarious structural condition, suffering from advanced timber decay and active instability driven by prolonged moisture ingress. The most critical threat to the building's integrity is the failure of the Eastern truss bearing, where significant water saturation—caused by defective rainwater goods discharging directly into the foundations—has led to the disintegration of the timber bearing plate and associated masonry.
- 710 This structural vulnerability is compounded by a severe, widespread woodworm infestation that has already resulted in the complete failure of a ceiling joist.
- 711 Furthermore, the use of inappropriate cementitious pointing is inhibiting the drying potential of the walls, accelerating stone erosion. Immediate temporary propping is imperative to prevent potential collapse of the roof structure, followed by urgent works to rectify the drainage defects and restore the structural bearings.

7.3 Recommendations

- 712 **Immediate Propping:** Install Acrow props under the southern truss bearing immediately to prevent collapse.
- 713 **Masonry & Timber Reconstruction:** Carefully remove the unstable stonework at the bearing, replace the rotten timber bearing plate, and rebuild using lime mortar.
- 714 **Reset Gutter:** The gutter needs to be reset to work as intended and ensure rainwater is being transferred away from the wall face and to the gully.
- 715 **Masonry Repairs:** Remove all inappropriate cementitious mortar, repoint these areas as well as the joints that have degraded with a flexible lime mortar NHL 2.
- 716 **Drainage:** Reroute the terminating drainpipe into a proper gully away from the foundations to prevent further saturation of the ground.
- 717 **Access:** Create an access hatch to allow proper future inspection and maintenance of the roof void.

8.0 Barn 3 (Chicken Barn)

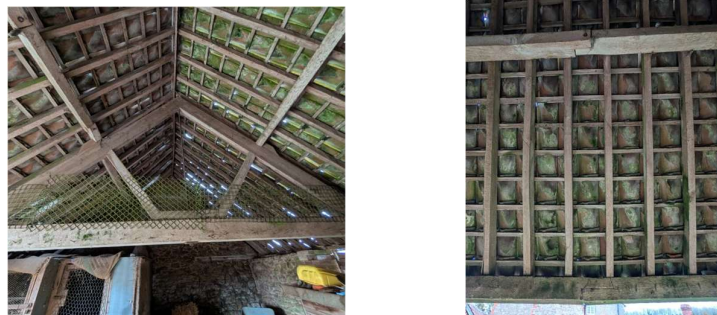
8.1 Observations



- 801 The Chicken Barn features oak framing with corrugated iron cladding. The jowl post on the southside of the opening has failed and is currently propped with an Acrow prop. The failure mechanism appears to be "Rust Jacking." Large iron nails or metal dowels were used for the connections instead of timber pegs. Once these oxidise, they exert an immense amount of pressure that has split the timber post along the grain. While the jowl post has failed, it has not caused a catastrophic collapse, suggesting the load has redistributed to adjacent timbers. The localised failure has caused some horizontal movement; this has resulted in the tea beam to shift off the eaves beam due to a lack of positive connection.



- 802 The roof structure is a modified Queen Post truss (with an additional central tie). For the purlins and eaves beam, a half-lap joint has been placed at mid-span. This is the worst possible location for this joint and will have led to excessive deflection but there doesn't seem to be any serious signs of these joints being overly stressed.



- 803 The Oak posts on either side of the opening have deteriorated at the base at the interface with the straddle stone.



8.2 Conclusions

- 804 The Chicken Barn exhibits compromised structural integrity driven by the failure of key timber connections and material incompatibility.
- 805 The most acute defect is the splitting of the southern jowl post due to "rust jacking," where the expansive corrosion of historic iron fixings has fractured the timber grain. This failure has destabilised the frame, resulting in lateral drift that has dislodged the tie beam from the eaves beam, severing the positive connection required for roof stability.
- 806 While the positioning of half-lap joints at mid-span represents an inherent historic design weakness, the immediate priority is addressing the active instability of the jowl post and the deterioration at the post bases caused by water ingress.
- 807 Comprehensive remediation is required, including the replacement of ferrous fixings with stainless steel, scarf repairs to damaged timbers, and the installation of rainwater goods to mitigate future saturation.

8.3 Recommendations

- 808 **Timber Repairs:** Reseat the tie beams onto the eaves beam. Fix mechanically, using A2 stainless steel angle cleats and A4 Stainless steel screws, to provide a positive connection between all tie beams to the eave's beams. Scarf a new top section of the jowl post, like for like, to match the existing post.
- 809 **Fixings Replacement:** Replace all corroded mild steel bolts and fixings with Minimum A2 Stainless Steel to resist the corrosive environment and prevent future rust jacking.
- 810 **Flaunching:** Flaunch the bottom of the jowl posts at the interface with the straddle post to ensure water run off at the base.
- 811 **Gutter:** Install a gutter, downpipe into a gully.
- 812 **Weather Sheltering:** Extend the corrugated sheet cladding on either side of the opening to act as a rain screen to reduce the saturation of the oak posts.

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