

Juxon Ltd

Asterleigh Farm
Kiddington Estate, Oxon

Report on the Condition of
The Plot 2

May 2023

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Project Asterleigh Farm, Kiddington Estate				Job Ref. 03271	
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Report on The Condition of Plot 2

at

Asterleigh Farm, Kiddington Estate, Oxon

SWJ Consulting Ltd has prepared this report in accordance with the instruction given by Alex Edge of Edgars on behalf of Juxon Ltd (The Client)

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Issue

Date	Status	Sheet No	Sets	Recipient
23/06/2022	S2	All	All	Alex Edge

Amendments

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APPENDIX A - PHOTOGRAPHS

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1. Introduction

1.1. Date of Instruction

27th March 2023

1.2. Brief

We have been appointed by the client, to undertake an assessment of the buildings at Asterleigh Farm on Kiddington Estate and to determine their suitability for conversion to residential use.

1.3. Objective

The purpose of the report is to record the condition of the building and to determine what works are required to allow the conversion from agricultural to residential use.

1.4. Scope

The scope of the report was limited to a visual inspection of the barn and no intrusive works, e.g. rial pitting were undertaken as part of the assessment.

It was not possible to gain safe access to the first floor of the brick-built portion of the covered yard, to the left of the entrance door during our visit owing to the unsafe nature of the first floor and roof above.

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2. Inspection

2.1. Date

18th April 2023

2.2. Weather

Sunny, partly cloudy

2.3. Present During Inspection

Rhys Skym of SWJ Consulting and Mr M Fielden of Juxon Ltd (part)

2.4. Method of Inspection

Visual, non-intrusive survey of the superstructure. No surfaces were opened up within the property.

2.5. Terms of Reference

The description of the various elements is given assuming that we are standing to the north of the barn looking south towards the main door.

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3. Existing Construction

3.1. General

Plot 2 is formed from the covered yard and a later brick built extension to the east. The covered yard is a traditionally constructed stone barn that appears to have been built in two sections. The original barn appears to be the northern half of the barn with the southern barn a later extension.

3.2. Construction

3.2.1. Roof

The roof of the northern section is a traditional cut roof with loose rafters spanning between timber trusses which are situated on either side of the entrance to the covered yard.

The trusses span between the front and rear walls. Part of the rear barn has timber sarking boards beneath the slate finishes but the sarking boards are absent at the front of the barn and on either side of the lay boards forming the valley with the southern portion of the barn. (Please see Figure 1).

The roof of the southern barn is also a traditional timber roof. The lower portions of the roof to the east and west of the barn span from the low-level masonry walls to timber beams supported on the internal timber columns.

The main roof rafters rest on purlins which are supported by timber trusses that are restrained to the supporting timber columns by steel tie bars. (Please see Figure 2).

3.2.2. First Floor

There are the remains of a mezzanine floor to the northern half of the boundary. The floor joists span from left to right and are supported by a combination of steel and timber floor beams. (Please see Figure 3)

3.2.3. External Walls

The existing walls to the northern barn and southern barn are of predominantly stone construction with ashlar stone quoins at the corners of the barns.

The exceptions to this are:

1. The left-hand wall of the southern portion of the barn has been rebuilt in brickwork. (Please see Figure 4)
2. The extension to the left of the northern barn has been built in the brickwork above the timber beam at the first-floor level. (Please see Figure 5)

3.2.4. Ground Floor

The ground floor appears to be a concrete floor slab but the overall thickness and make-up of the slab could not be ascertained during our visit.




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3.2.5. Foundations

The nature and depth of the foundations could not be determined during our visit but it is assumed that the foundations are of masonry construction and bear onto the underlying limestone.

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4. Observations

4.1. Moisture Penetration

There are significant openings in the roof coverings of the northern portion of the barn. (Please see Figure 1). The resulting increase in moisture content of the timber has encouraged fungal growth and decay of the purlins at the junction of the purlin and roof trusses. (Please see Figure 6).

The timber mezzanine floors within the northern portion of the barn also show signs of significant decay owing to moisture penetration into the building. (Please see Figure 7)

4.2. Damage to the Column Bases.

Whilst stone plinths have been provided at the base of the columns, the timber columns on the right-hand side of the barn are showing significant signs of decay at the base of the columns.

The most likely explanation is that the sloping of the floor slab internally to provide a consistent fall across the barn has raised the floor level above the base of the columns.

There is evidence of attempts at repairs in the past with timber sections that do not match the size of the existing columns. (Please see Figures 8 and 9)

It was not possible to inspect all the bases of the columns on the left-hand side of the barn owing to the presence of rubble from the collapsed wall and scaffold that had been installed to support the roof.

4.3. Collapsed Masonry to Left Hand Wall

The left-hand wall of the southern portion of the barn supports a valley which is formed by the lower roof of the covered yard and the roof of the western block of The Stonemasons Courtyard which will become part of Plot 3.

There appears to have been water ingressing through the barn for some considerable time which has led to the partial collapse of the wall resulting in a consequential loss of support of the roof to the Stonemasons Courtyard and the roof of the covered yard. A scaffold frame has been erected to support the lower roof of the covered yard. (Please see Figures 10 and 11)

In addition to the collapsed masonry, the remaining timber lintels supporting the walls above the lintels are showing signs of fungal decay and distress in the form of excessive deflection leading to cracking of the masonry above. (Please see Figure 12).

4.4. Damaged Masonry to Right Hand Wall

At the southwestern corner of the barn, the masonry wall has been damaged by significant water penetration through the roof which has washed away the mortar and may well have washed out the hearting between the stone leaves.

The continued moisture penetration has also caused the bearings of the rafters and the timber sole plate to decay at this location as well. (Please see Figure 13).

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4.5. Outward Movement of the Eastern Extension

The first floor walls of the eastern extension to the main barn have failed and are currently being propped by a scaffold frame. Whilst we could not gain access to the first floor of the barn to assess the roof structure, it is felt that the most likely cause is the failure of the roof structure and consequential application of horizontal load to the head of the wall. (Please see Figure 14 and 15 in Appendix A).

4.6. Loss of Low-Level Mortar

There are various places around the perimeter of the building where the mortar at or just above ground level is absent. (Please see Figure 16).

4.7. Collapse of the Stonemasons Courtyard Roof.

The roof of the Stonemasons Courtyard has collapsed and is covered in more detail in our report number 03271-SWJ-XX-XX-RP-S-00003.

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5. Conclusions and Recommendations

5.1. Conversion to Residential Use

The covered yard and its subsequent extensions are considered suitable for conversion subject to the following works being undertaken as part of the conversion.

5.2. Remove the Collapsed Roof from the Stonemasons Courtyard

Whilst the roof in question is part of Plot 3, it's condition does affect the stability of the flank wall of Plot 2 and so the recommendations are repeated within this report.

The collapsed roof of the western stable block of the Masons Courtyard is dangerous and should be demolished to remove the risk of danger to the occupants of the site and to prevent any further collapse of the roof structure from damaging the covered yard.

5.3. Remove the Remaining Roof Coverings Form the Low-Level South-Eastern Roof.

The remaining roof coverings on the low-level south eastern wall should be removed to allow the condition of the existing timbers to be fully surveyed. Any damaged or decayed rafters should be replaced with a timber member of a similar species and cross-section.

5.4. Repair the South-Eastern Wall

Once the Masons Courtyard roof has been removed and the rubble removed from around the southeastern wall, a suitably qualified stone mason should be appointed to rebuild the southeastern wall to act as a support for the restored roof.

5.5. Repair the Roof

The roof coverings, and associated rainwater goods, should be renovated to prevent any moisture ingress into the barns. Whilst the roof coverings are being renewed. Any broken or decayed rafters should be replaced with a timber member of a similar species and cross-section.

5.6. Undertake a Full Timber Survey

Once the remaining timbers have had the opportunity to dry out, e.g. after three to six months, a suitable specialist, e.g. Timberwise, should be appointed to survey the existing timbers to:

1. Prepare a specification for the treatment of the timber to prevent fungal decay of the timber
2. Prepare specifications for the treatment of the timber to prevent insect attack
3. To prepare a schedule of timber repairs, in conjunction with the engineer, to allow any damaged sections of the trusses and supporting timber frames to be replaced.

5.7. Repoint the Masonry

Where the masonry has been damaged by water ingress or where frost action has eroded the mortar at or just above ground level, the walls should be repointed with a suitable lime mortar

5.8. Removal of the Roof Above The Extension

We believe that the roof to the extension has failed leading to excessive lateral movement of the rafters at wall plate level and the consequent damage to the masonry wall.



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We recommend that the existing roof is removed as soon as possible to allow safe access to the first floor of the barn to allow the walls and floor to be surveyed and a suitable maintenance plan for the floors and wall to be put in place.



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Figure 1 - Existing Roof Structure to Northern Half of Barn



Figure 2 - Existing Roof Structure of Southern Half of Barn



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Figure 3 - Remains of Mezzanine Floors

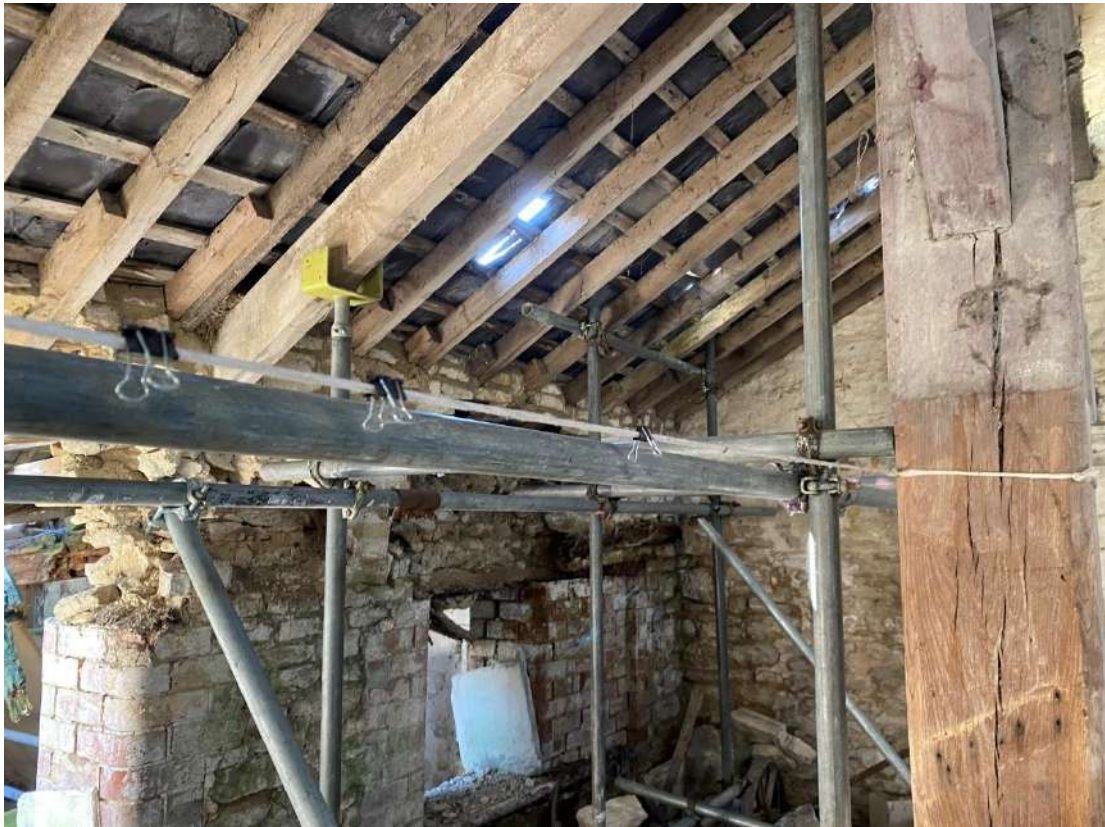


Figure 4 - Rebuilt Wall at Left Hand Side of covered yard



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Figure 5 - Vertical Extension of Covered Yard



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Figure 6 - Fungal Attack and Decay of the Supporting Timber



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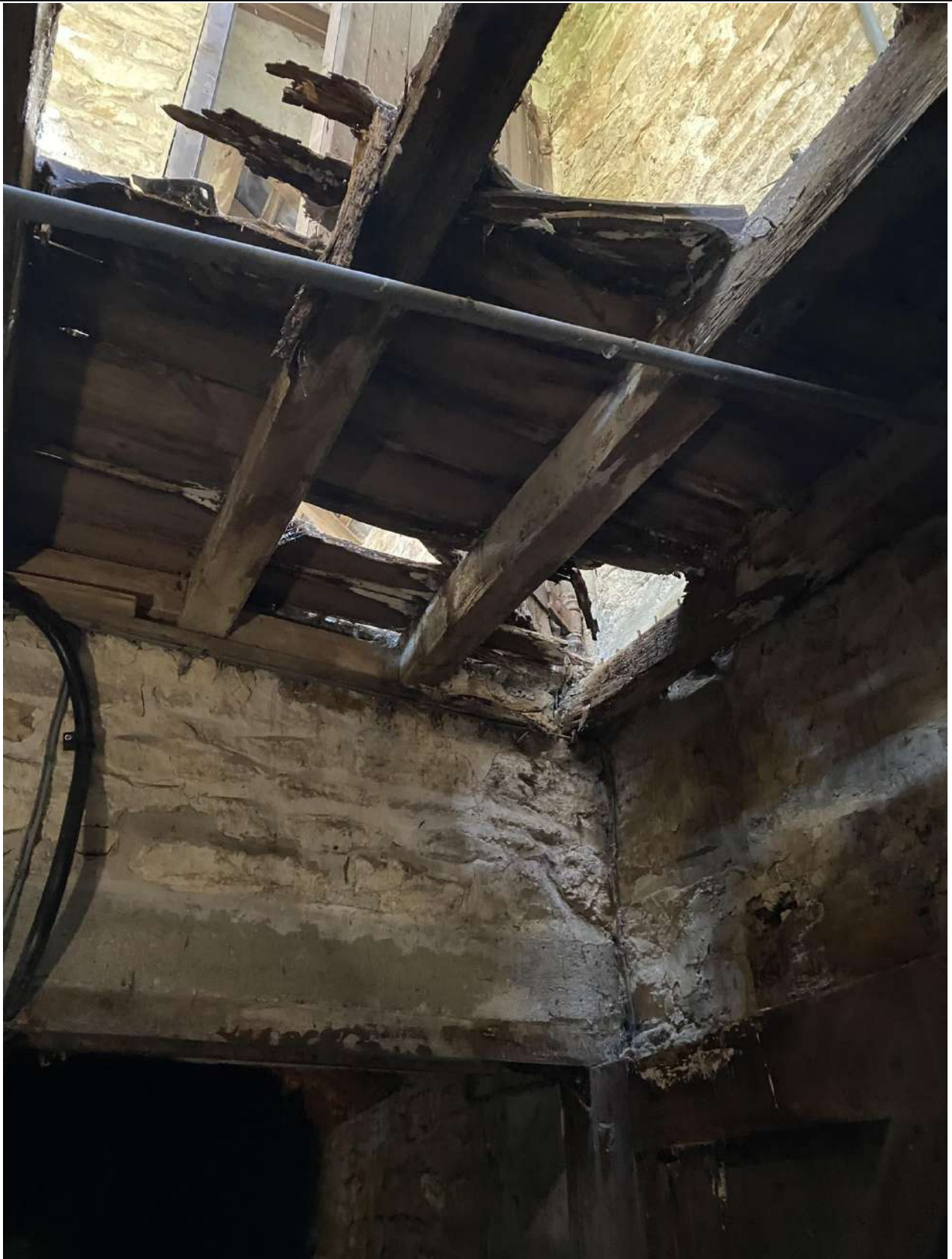


Figure 7 - Decay of the Timber Mezzanine Floor



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Figure 8 - Decay of Column at Base



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Figure 9 - Previous Repair of Column



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Figure 10 - Loss of Masonry At Valley Between Stonemasons Courtyard and the Covered Yard



Figure 11 - Scaffold Support to Covered Yard Roof



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Figure 12 - Lintel Failure in Left Hand Wall



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Figure 13 - Damage to Southwestern Corner of the Covered Yard



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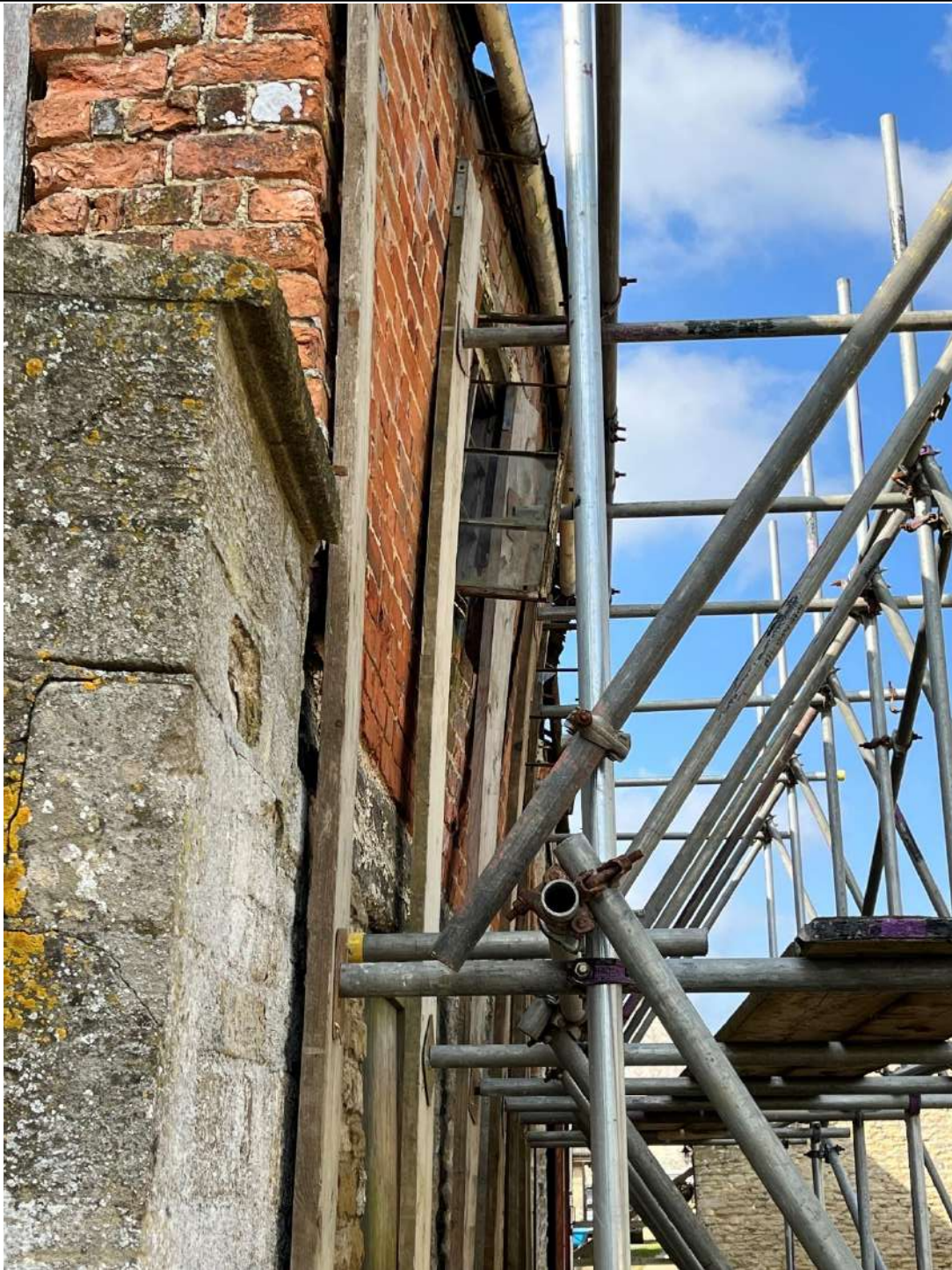


Figure 14 - Outward Movement of North Wall



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Figure 15 - Outward Movement of First Floor Wall and Installation of Scaffold Shoring



Figure 16 - Loss of Pointing Along Western Gable