

Assunnah Islamic Centre, Bruce Grove

Structural Engineering Condition Report

19th Century Barn

April 2026



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1.0 Introduction

This structural engineering condition report has been prepared for our Client, the Assunnah Islamic Centre, by Structural Assembly. The report sets out our understanding of the general structural condition of the 19th Century portion of the Assunnah Islamic Centre building, Tottenham. The report has been commissioned due to concerns over the general condition of the 19th Century portion of the building, and to inform the proposed approach to the potential redevelopment of site.

The report summarises our understand of the existing 19th Century portion of the building, identifies key issues related to the structure's condition, and our initial comments on the proposed redevelopment of the building.

The report is based on observations made during our site visit on 27 March 2026, and the record information provided by our Client on the history of the site. During our visit we had general external access around the building at ground level to the south, east, and west of the building. Access to the north was not possible as it is blocked by the adjacent building. Internally we had access to both ground and first floor level within the 19th century and 18th century portion of the building.

No intrusive investigations have been carried out as part of our review of the condition of the existing building. Given the age of the building, it is likely that there will be some further structural defects that are present in areas of the building not accessible during our visit or hidden behind the finishes. As a result, the structural defects noted should not be considered to be exhaustive.



2.0 The Site

The Assunnah Islamic Centre is located on Bruce Grove, Tottenham, London, N17 6SN. It is within the Tottenham High Road Conservation Area in the London Borough of Haringey.

The existing building comprises three distinct portions of differing ages: an early 2000s office building to the south, a 19th century building at the centre, and an 18th century barn to the north. Both the 18th and 19th century portion of the building are included on Haringey's local list of buildings of architectural and historic interest.

To the south and west of the site lies the Former Wooldridge Brewery, which includes a Grade II listed gatehouse. To the north-west is Charlton House Medical Centre, accessed from the High Road via a passageway immediately to the north of the site. To the east are Nos. 559 to 595 High Road. The site itself is accessed via a passageway between Nos. 565 and 567 High Road.

The site has been in the ownership of the Client since 1997. During this period, the Client has undertaken various works to maintain and adapt the buildings, to suit their needs. The most significant intervention includes the construction of the southern extension in the early 2000s. We understand that an extensive phase of repairs were undertaken to the 18th and 19th century portions of the building at the same time, although the scope of repairs completed is not known.

3.0 The Existing Building

The 19th century portion is roughly L-shaped on plan and comprises two storeys above ground level. Refer to Figure 01 for a diagram of the Assunnah Islamic Centre buildings and the indicative extent of each phase.

The primary structure consists of external loadbearing brick masonry walls to the east, south and west elevations - Photo 01. At the northern end, the wall separating the 19th and 18th century portions of the building comprises the original 18th century timber gable wall - Photo 02.

There are a number of large openings within the east elevation at both ground and first floor levels, and within the south elevation at first floor level - Photo 03.

The ground floor and first floor are understood to comprise a suspended timber construction. The first floor is open plan other than around the stairwell. The ceiling at first floor level follows the profile of the pitched roof - Photo 04.

The roof structure is formed in cut softwood timber, comprising common rafters with high-level collar ties. The rafters are supported on timber wall plates on the external walls. The southern portion of the roof is tied at eaves level, with timber ties installed at approximately 2.5 m centres.

At the northern end of the barn, where the building is wider, the rafters are supported at mid-span by a timber purlin. The purlins span between two trusses: a steel truss with a timber tie chord - Photo 05, and a steel roof truss with a steel tie chord - Photo 06. There is a glazed skylight up the full length of both roof pitches between the 19th and 18th century portions of the building - Photo 06.

According to the British Geological Survey, the ground conditions at the site comprise the Enfield Silt Member (sandy silty CLAY) which overlays the London Clay bedrock. The foundations are expected to be shallow brick corbels bearing on to the Enfield Silt Member.

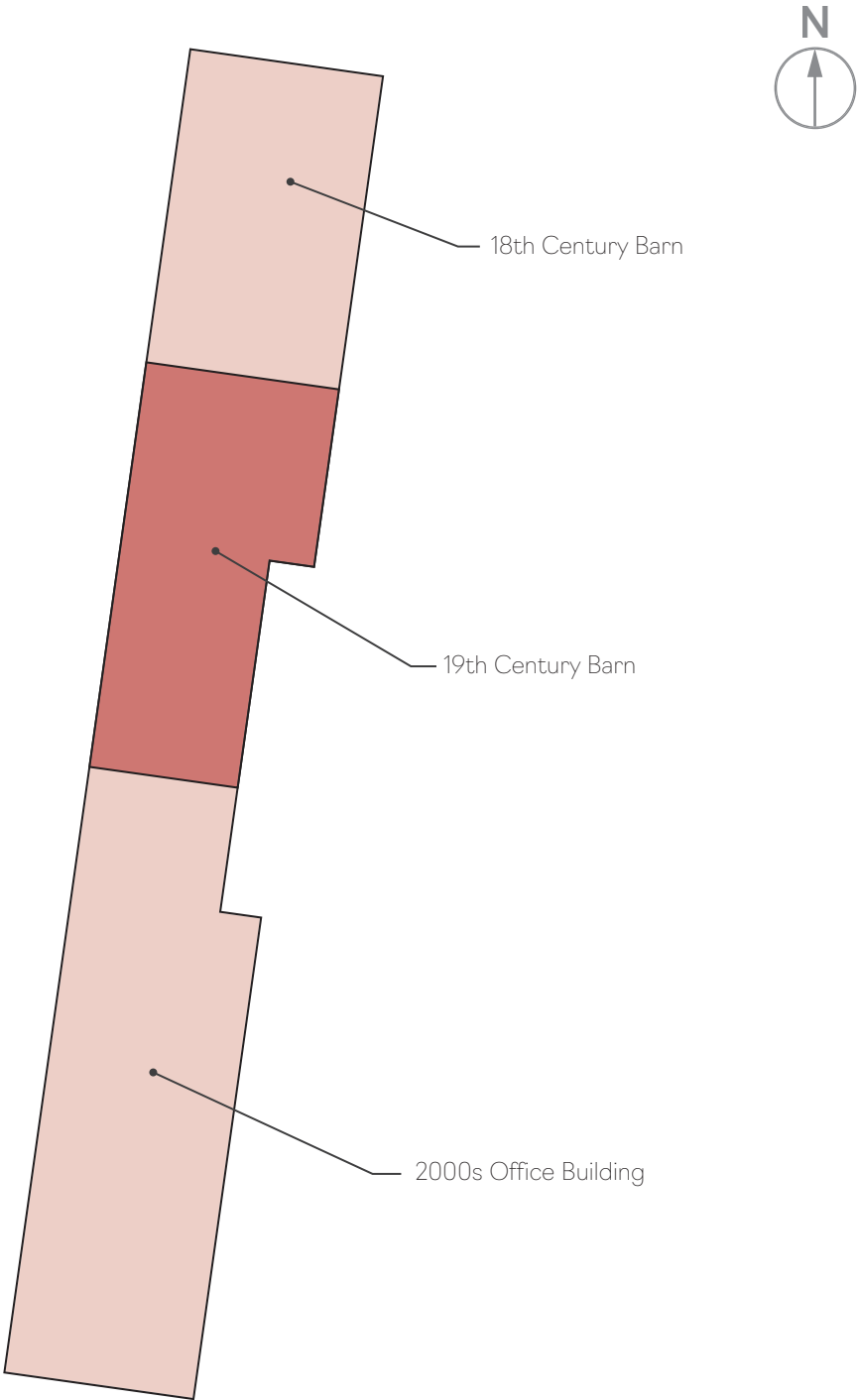


Figure 01 - Block Plan of Assunnah Islamic Centre





Photo 01 - East Elevation



Photo 02 - North End of 19th Century Barn

The photo shows the gable end of the 18th Century Barn (timber boarded). The steel truss support the end of the 19th Century Barn roof structure.



Photo 03 - View of South East Corner of the 19th Century Portions

The elevation contains a series of large window openings at both ground and first floor. The window in the south elevation is full width between the return walls forming the west and east elevations.

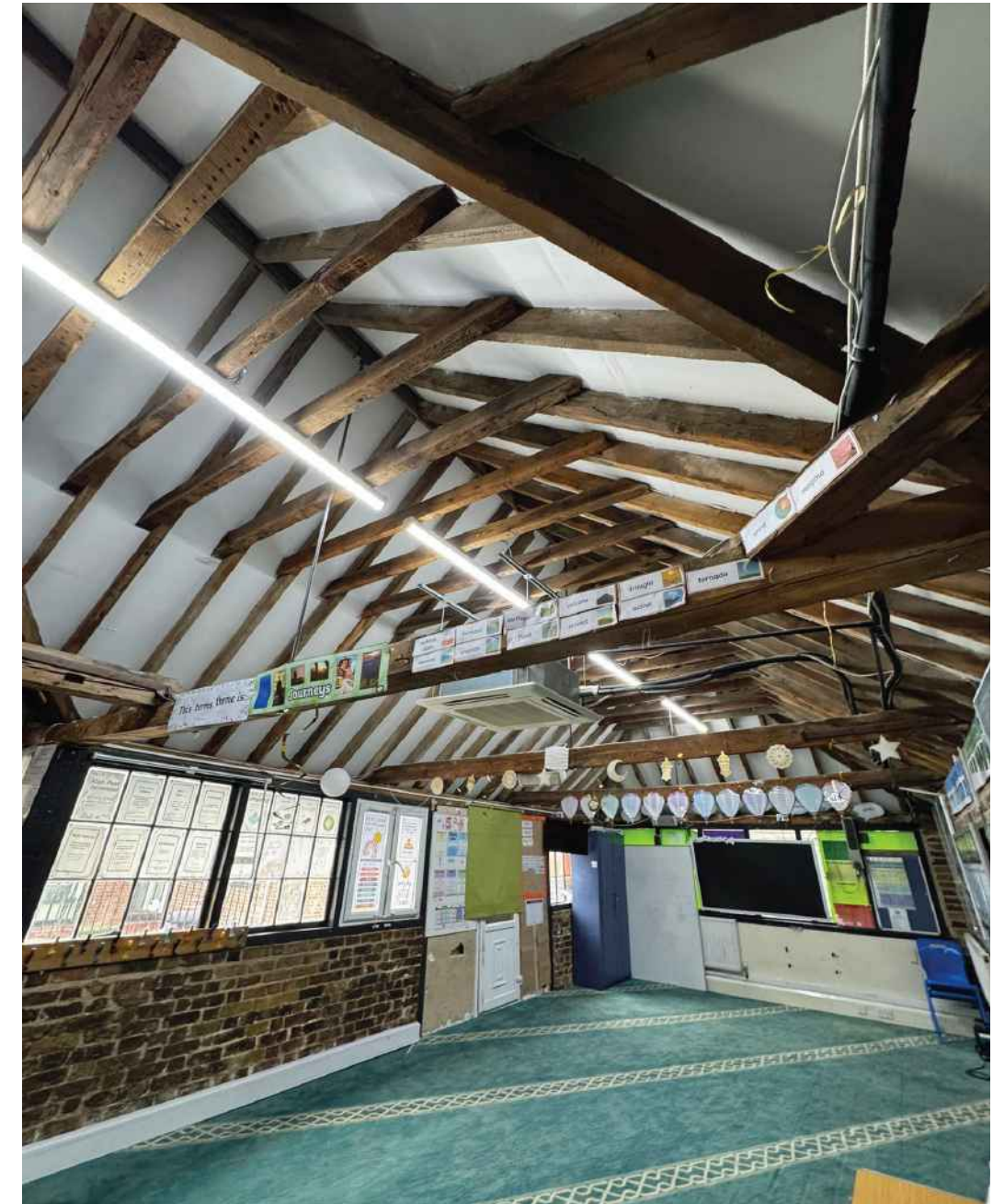


Photo 04 - View of the Southern Portion of Roof at First Floor - Looking South

The ceiling at first floor follows the profile of the roof structure.



Photo 05 - Northern Portion of the Roof - Looking North

The photo shows the steel and timber truss spanning between the east and west elevations.

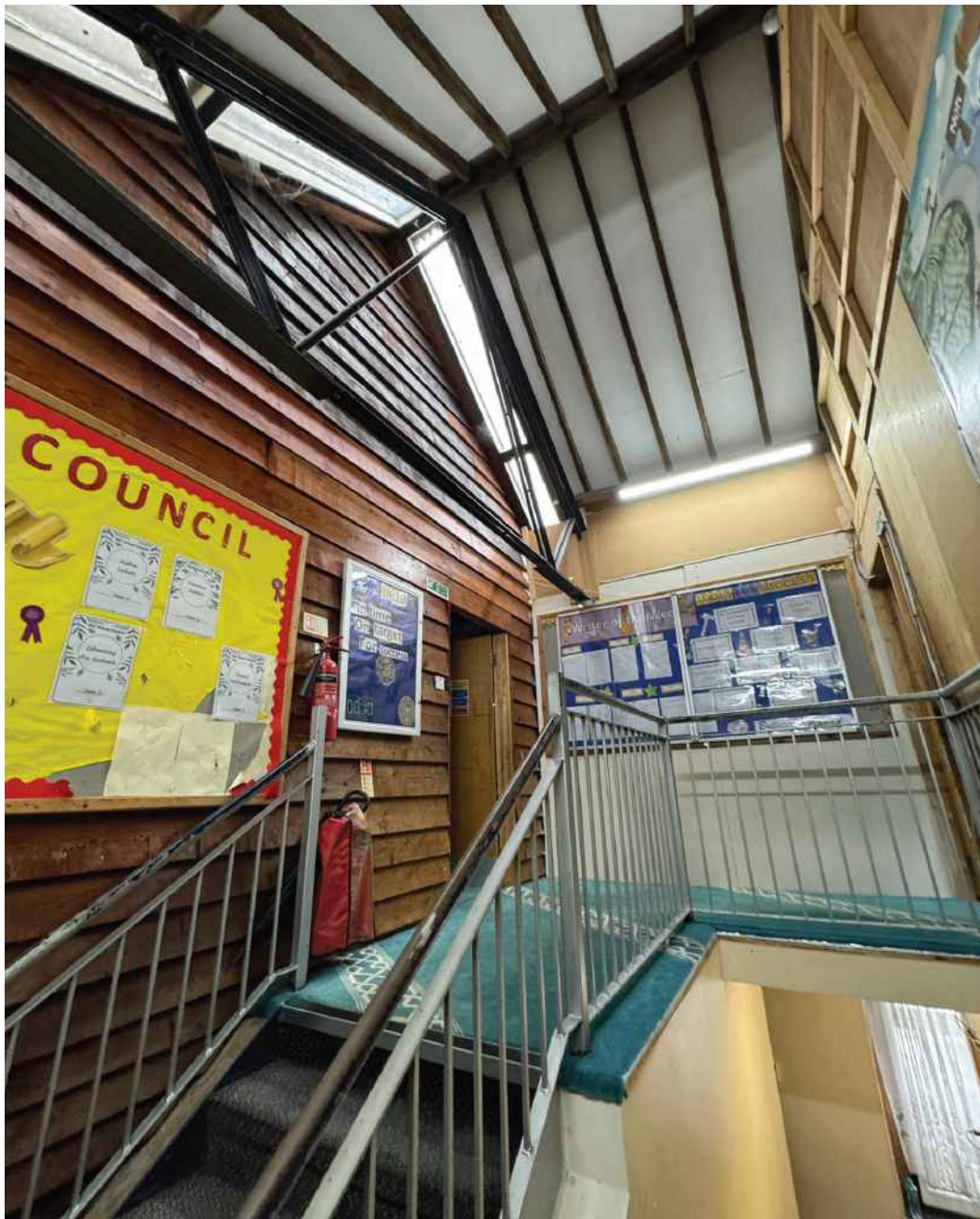


Photo 06 - Northern Portion of the Roof - Looking North

The photo shows the steel truss spanning between the east and west elevations and the full width skylight between the 18th and 19th Century portions of the building.

4.0 Observations

Our structural engineering observations relating to the 19th century portions of the building are summarised below. Photos of the existing building taken during our visit are also included after this section.

i. Bowing of the External Walls

The extent and arrangement of openings within the east and south elevations, together with the lightweight timber construction of the north wall, mean the 19th century structure has a limited capacity to resist horizontal stability loads in the east-west direction.

The brickwork adjacent to the ground floor doorway in the east elevation was observed to be bowing outward at first floor level – Photo 07. Further outward bowing is evident at eaves level along the east elevation, with the deformation most pronounced at mid-span of the elevation – Photo 08.

Vertical cracks were also observed in the east elevation at both ground and first floor at the interface between the 19th and 18th century portion of the buildings – Photo 09. The cracks indicate differential movement between the two portions of building. Cracks were also observed in the corners of the brickwork along the east elevation – Photo 10.

The bowing, and subsequent cracks in the brickwork, are likely to be the result of the lateral thrust forces from the roof structure (see section ii. below), exacerbated by the limited capacity of this part of the building to resist horizontal forces.

ii. Spreading and Racking of the Roof

The southern portion of the roof is not robustly tied to effectively resist the spreading forces from the roof structure. The raised collar ties and infrequent eaves-level ties do not appear to provide enough restraint to the roof, and this results in horizontal thrust forces being imposed at the top of the walls between tie locations. Due to the arrangement of openings within the walls, the roof relies on the timber wall plates at the head of the wall to span between the tie positions for stability.

There are a number of half lap joints in timber wall plate at eaves level – Photo 11. The cumulative effect of these repeated half lap connections introduces multiple points of weakness along the length of the wall plate, reducing the wall plates' ability to span between the eaves-level roof ties without excessive lateral movement.

In addition, the eaves-level ties were observed to be sagging under their self-weight – Photo 12. For the ties to act effectively in tension, they must be relatively straight. The existing deflection indicates that the ties would need to be straightened under load before they can adequately resist and transfer the horizontal thrust forces from the roof.

The northern portion of the wall appears to be tied across the width of the roof more effectively. However, the rafters appear to be racking towards the north – Photo 13. This suggests that the roof is not adequately braced in the north-south direction.

iii. General Damaged Brickwork

Damage was observed to the brickwork forming the arch over one of the window openings at ground floor level in the east elevation. A number of bricks are missing from the inner ring of arched brickwork – Photo 14. The damage appears to relate to the installation of services through the external elevation. The damage to the arch has removed the arch's capacity to arch over the opening below and could result in movement or spreading of the arch.

iv. Rainwater Drainage

A number of issues were identified in relation to the existing surface water drainage arrangements around the building, including a rainwater pipe discharging approximately 1 m above external ground level – Photo 15. The external ground levels also fall towards the building – Photo 16. Whilst a slot drain is present in front of the elevation, it appeared to be poorly maintained.

The defects associated with the surface water drainage increase the risk of saturation of the existing masonry, and potential softening of the clay the building is founded on.

Persistent wetting of the brickwork is likely to accelerate deterioration and may increase the risk of timber decay where timber elements are in contact with the masonry. Whilst increased moisture content in the ground may lead to local softening of the clay, potentially resulting in differential settlement of the building.

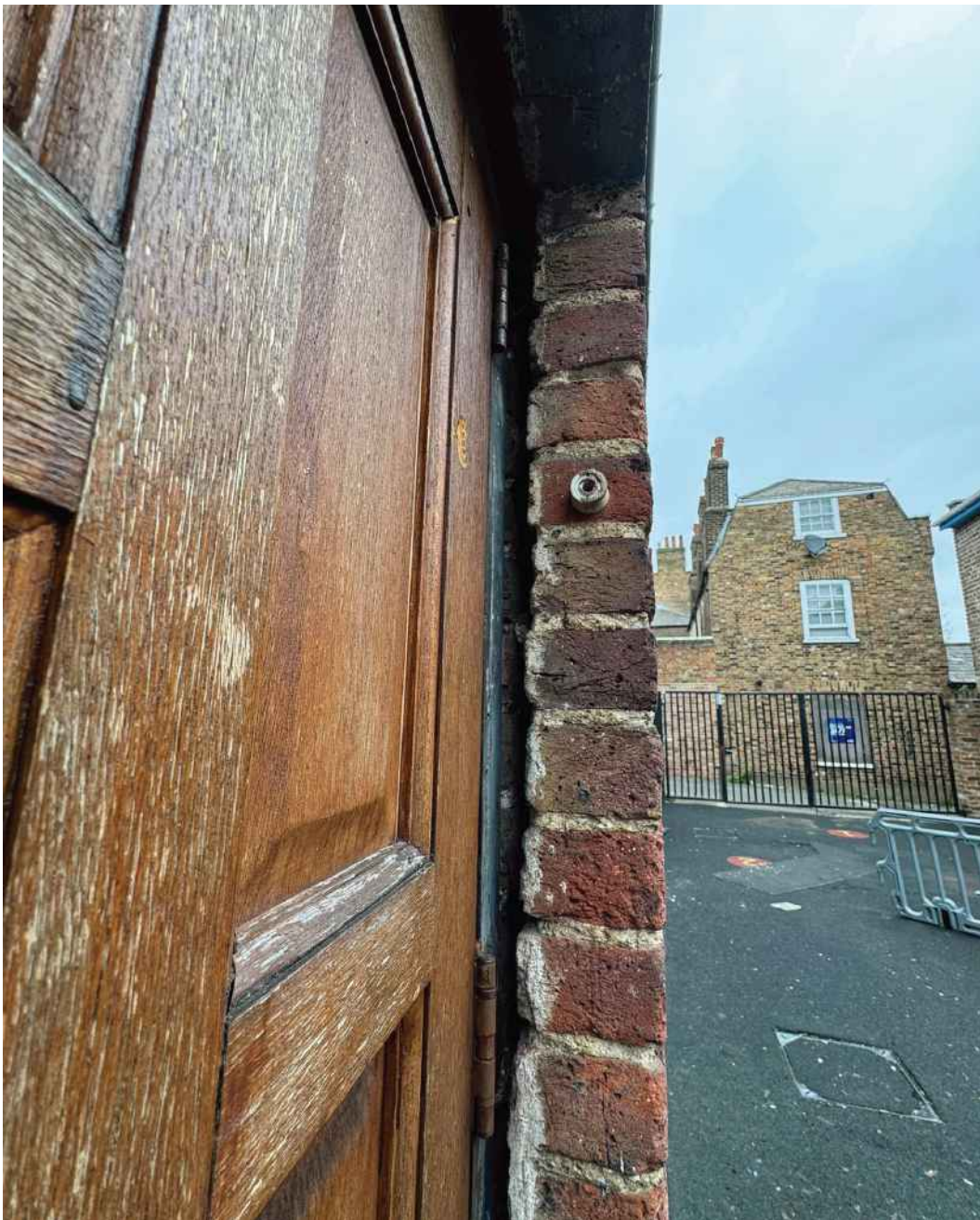


Photo 07 - Bowing Brickwork by Doorway in East Elevation - Looking North

We observed that the brickwork adjacent to the doorway in the east elevation is bowing out at the level of the first floor.



Photo 08 - Photo Looking North along East Elevation

We observed that the first floor wall is bowing out at eaves level. This was most prominent in the middle of the elevation.





Photo 09 - East Elevation - Interface between 19th and 18th Century Portions

We observed vertical cracks in the east elevation on the line of the junction between the 19th and 18th Century portions of the building.

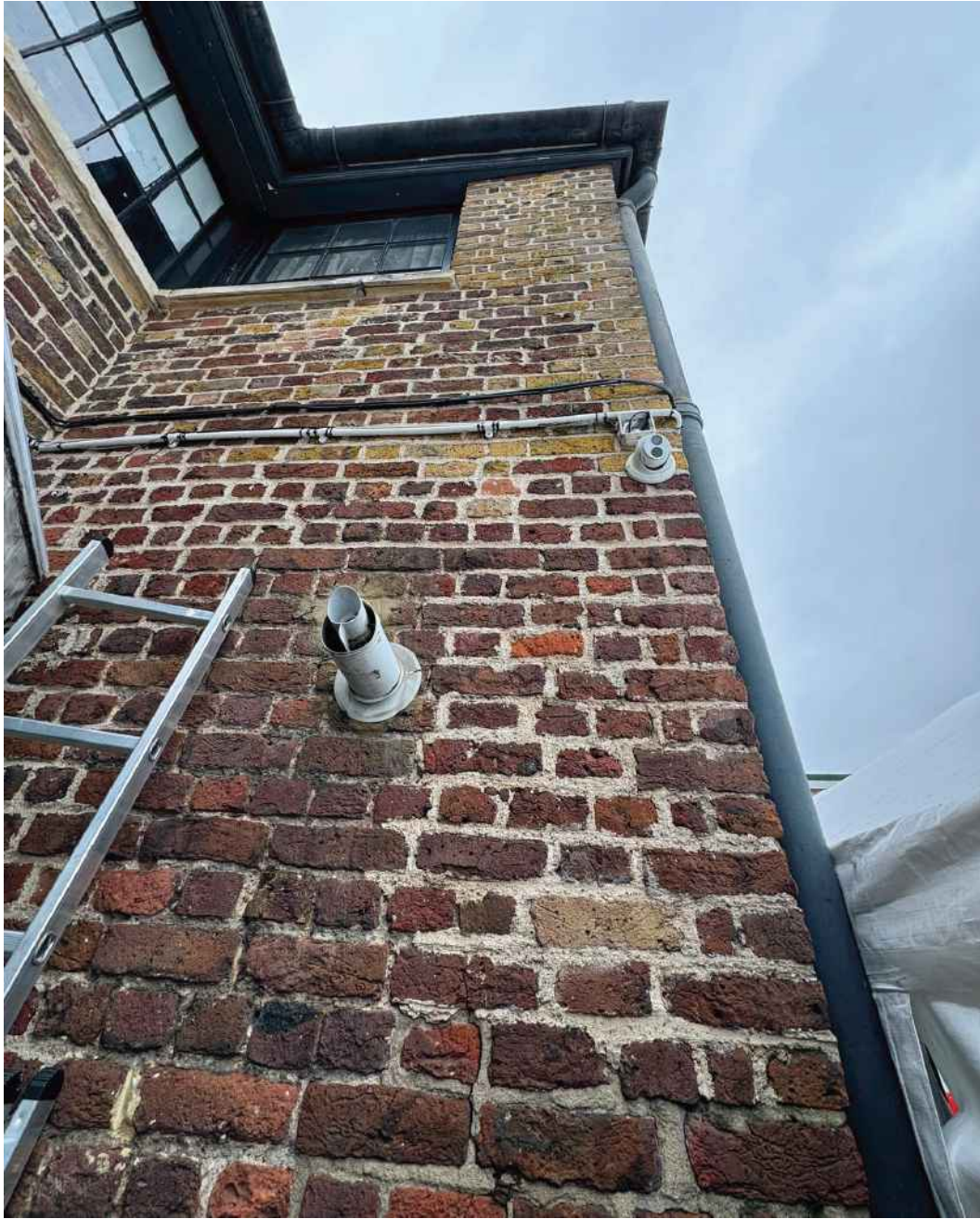


Photo 10 - Return Wall in East Elevation

We observed cracks and distortion in the brickwork forming east elevation. These were concentrated near the corners, including at the return wall in the elevation.





Photo 11 - First Floor - Timber Wall Plate

There are a number of half lap joints in the existing timber wall plate. The laps do not align with the location of the eaves level ties.

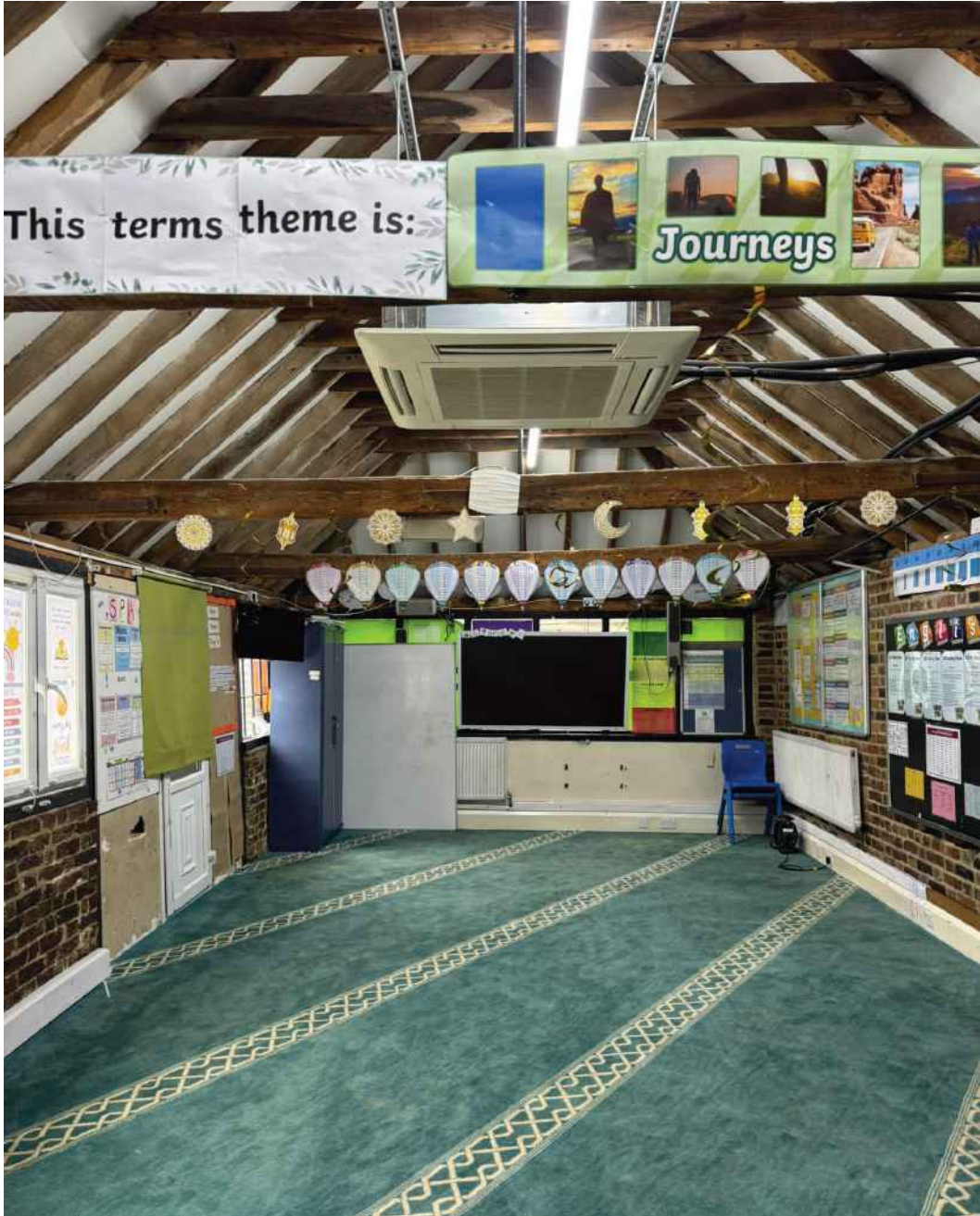


Photo 12 - First Floor - Southern Portion

We observed that the eaves level ties have sagged under thier selfweight, reducing their effectiveness to act as ties.

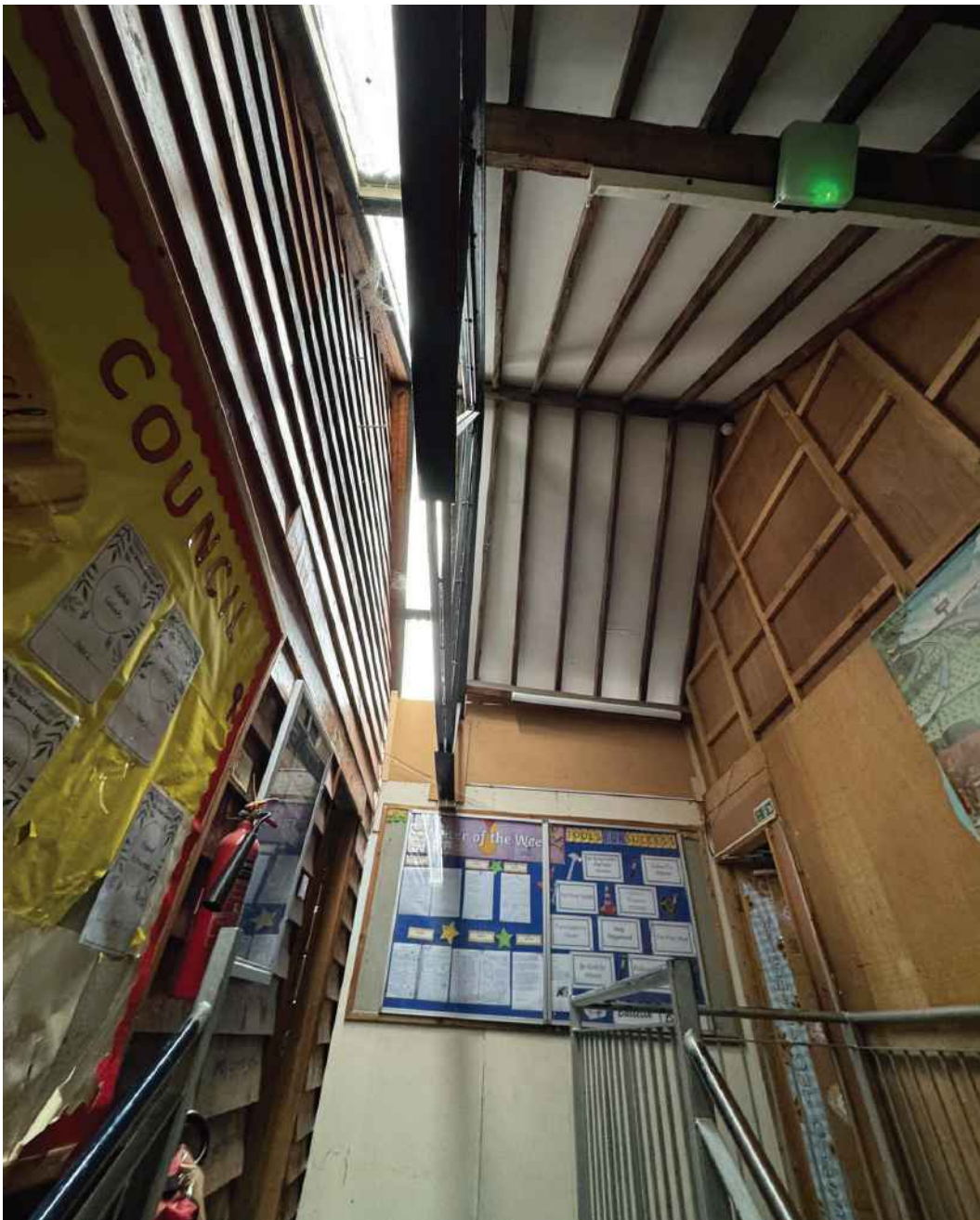


Photo 13 - First Floor - Northern Portion - Roof Structure

The rafters forming the northern part of the roof appear to be racking, with the ridge moving north relative to the wall plate.



Photo 14 - East Elevation - Damage to Brickwork Arch

Damage to the existing arched masonry in the east elevation which appears to be due to previous services installations.

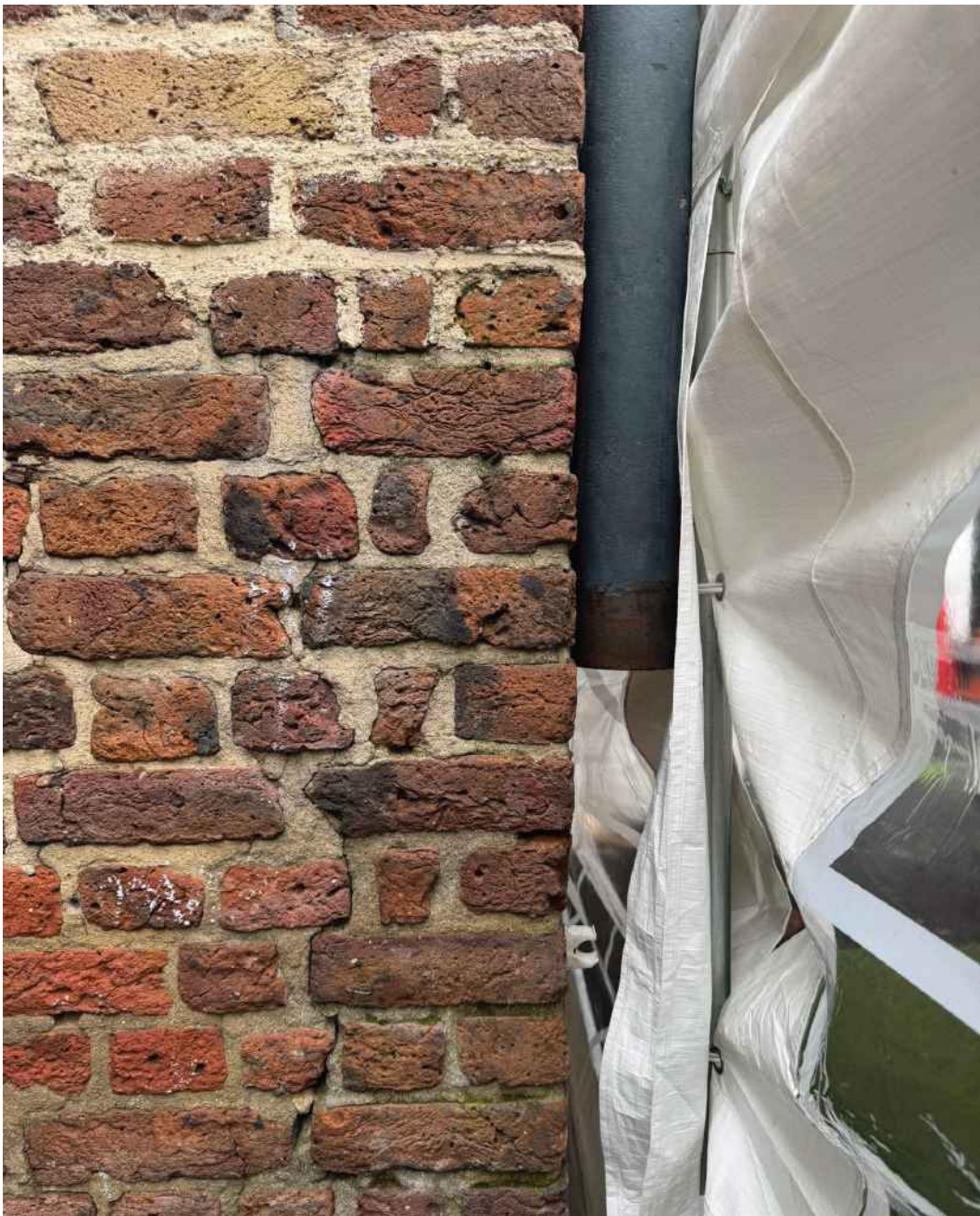


Photo 15 - Surface Water Down Pipe - East Elevation

The existing rainwater downpipe terminates approximately 1m above the external ground level, resulting in repeat wetting of the existing elevation.



Photo 16 - Drainage along East Elvation

The existing slot drain along the east elevation is paritially blocked in some areas, limiting its effectiveness and increasing the risk of water ingress to the building.



5.0 Conclusion

The existing structure to the 19th Century portion of the building is in a poor condition. The existing structure appears to have been poorly conceived and has experienced movement as a result of its inability to adequately resist the horizontal thrust from the roof, and general lateral stability loads.

These issues are systemic in nature and are likely to require significant interventions to address the underlying issues, along with repairs to address the damage.

The design of any interventions to strengthen the building would require opening-up investigations and trial pits to be undertaken to improve our understanding of the existing structure. Movement monitoring would also be required to confirm our understanding of how the building is behaving.

Based on our current understanding of the building, possible strengthening works may include installing new framing internally to provide additional restraint to the elevations and resistance against lateral stability loads in the east-west direction. The new framing would likely require the formation of new foundations, and potential underpinning of the existing building. The framing is likely to be either timber or steelwork.

The existing roof structure may also need to be improved to limit further spreading and racking of the roof. This may include installing additional ties at eaves level, as well as installing sheathing to the roof to allow it to act as a diaphragm to span between the framing elements and resist racking.

Further general localised repairs would be required to address the symptoms of the movement, such brickwork repairs to the elevations.

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