

PROJECT TITLE: **Alkrington Hall East - Minor Alterations**

PROJECT NUMBER: **2303441** FILE: **2303441-R3-01**

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REPORT TITLE: **STRUCTURAL APPRAISAL REPORT**

INTRODUCTION

Alkrington Hall is a Grade II* listed building. During the 1990's the property was divided into four separate dwellings, of which Alkrington Hall East is one of the larger.

The Owners of Alkrington Hall East propose to undertake some minor restoration works and minor alterations to complete the internal division of the properties, which was never fully resolved.

An application has been made to Rochdale Borough Council for Full Planning and Listed Building Consent in respect of the proposed works. A "Heritage Assessment and Design and Access Statement" (the Heritage Report) was prepared by Ian Bright Architects in support of the application.

The proposed works have been described within the Heritage Report under five separate mini-projects, of which Mini-project 1 involves the proposed insertion of a new stair to internally connect the ground floor and basement levels. The proposed works will involve some modifications to the existing structure and Rochdale Borough Council has requested a structural report in support of the proposals.

Techniker Consulting Engineers has been appointed by the Owners to appraise the structural implications of the proposed works under Mini-project 1 and this Structural Appraisal Report responds to that brief.

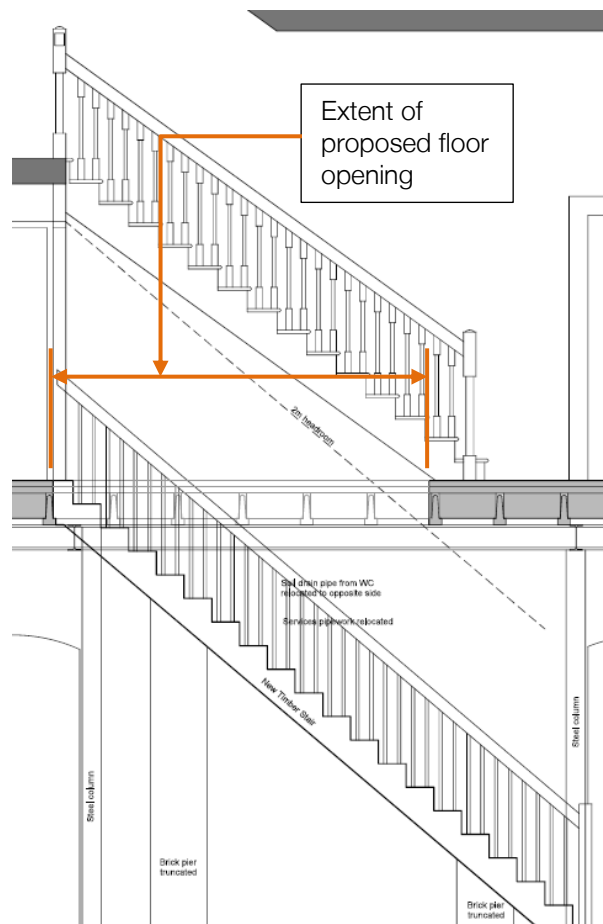
SCOPE OF APPRAISAL

This Appraisal is based on a detailed review of the proposed works as described within the Heritage Report, making reference to the photographs and drawings therein, and drawing on our knowledge and experience of similar structural arrangements.

GENERAL DESCRIPTION OF THE PROPOSED WORKS

The proposed works involve the insertion of a single flight, timber staircase connecting ground floor and basement levels, located beneath an existing staircase connecting the ground and first floors. An opening will need to be formed through the existing ground floor structure to accommodate the new stair.

The extent of the works is indicated on the drawings included in the Heritage Report, from which the extract below is taken.



STRUCTURAL IMPLICATIONS OF THE PROPOSED WORKS

Photographs included within the Heritage Report indicate that the ground floor structure comprises a series of equally spaced concrete beams with rectangular block infills between them. This relatively modern form of construction is commonly known as a “beam & block” floor and is clearly not original to the building.

The ends of the concrete beams can be seen to be supported on steel beams spanning between brick piers. The beams and piers can plainly be seen to be non-original. (Refer to photographs overleaf, extracted from the Heritage Report).

The existing beam & block floor, steel beams and pier arrangements are indicated on the drawings included in the Heritage Report for Mini-project 1.



The above photographs have been extracted from the Heritage Report. The photograph on the left shows the beam & block floor, with the ends of the floor beams supported on steel beams (painted red). The steel beams can be seen to span between brick piers, which provide support via concrete padstones.

Drawings showing the proposed works indicate that two of the brick piers will need to be removed to accommodate the new stair as close to the original wall as possible. This will result in a loss of support to part of the floor and a new support structure will need to be provided. Additionally, new structure will be required to support the beam ends around the edge of the proposed floor opening.

The proposed floor plans within the Heritage Report show an indicative structural arrangement comprising steel beams and columns set out around the footprint of the proposed stair. The arrangement shown would be structurally stable and functional.

CONSIDERATIONS FOR CONSTRUCTION

The works will need to be planned to be safely carried out whilst maintaining use of the ground floor through properly designed temporary and/or permanent support.

Temporary propping will be required to facilitate the removal of the existing piers and the installation of the new steel columns and beams. Once the new steel support frame is in place the temporary supports can be removed before forming the new floor opening, using precision cutting techniques.

The condition of the basement floor will be assessed prior to placing temporary supports on it and further investigations carried out as necessary to facilitate the design of new column bases.

CONCLUSION

The existing ground floor in the hall area is a modern intervention comprising a beam & block floor supported on steel beams and brick piers.

A new floor opening and support for the remaining floor and new stairs can be safely constructed independent of, and without affecting, the original building fabric.