



Richmond Hill Campus

Addendum to Stage 3 Report

Project no. 1399

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Revision

Date	Suitability	Revision	Comments
10 May 2024	S1	P01	First Issue
28 Aug 2024	S2	P02	Section 2.2 added

Quality Assurance Review

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1.0 Introduction

This report is an addendum to the Stage 3 report submitted as part of the Listed Building Consent application. It addresses the items raised in Stand Consulting Engineers' letter dated 25 April 2024.

2.0 Main Building

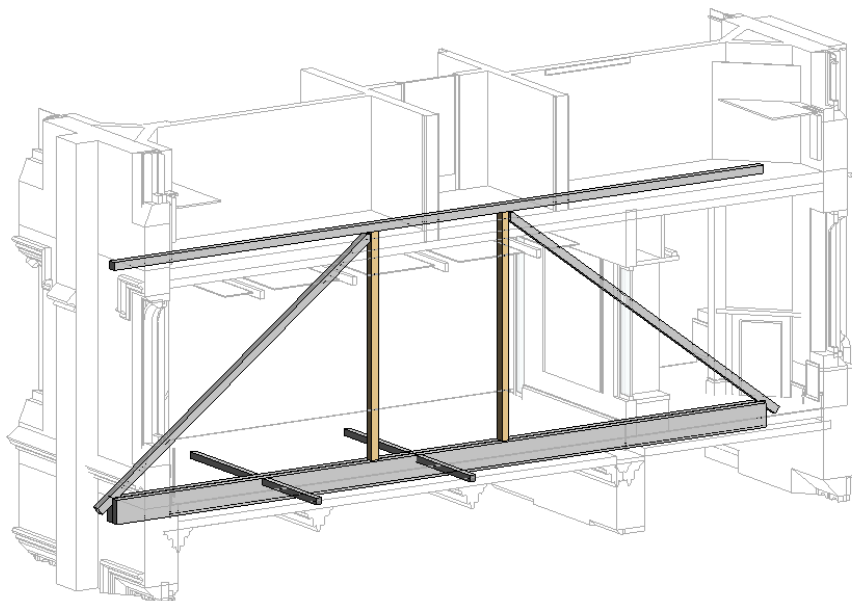
Input from contractors has been sought on the temporary works design to the wing alterations. Option A as laid out in the Stage 3 report is to be adopted by the contractor. This option limits the impact on the existing building fabric.

2.1 2nd Floor

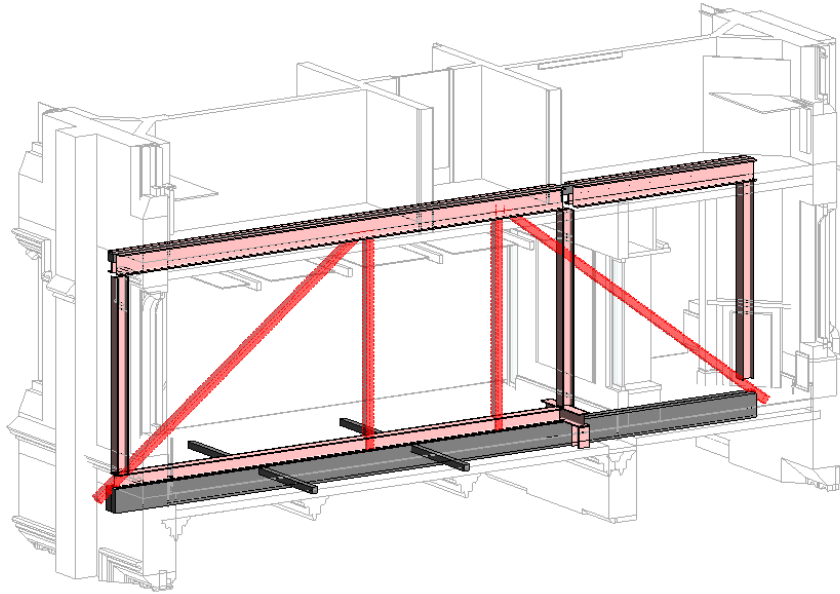
Opening up works to confirm structural elements has been undertaken since the Stage 3 report was written. This has revealed that the partitions to the 2nd floor of the main building are acting as trusses.

A design has been developed to allow the removal of the stud walls and the struts within. This requires the propping of the existing floors. Once propped the struts are to be removed and new steel installed.

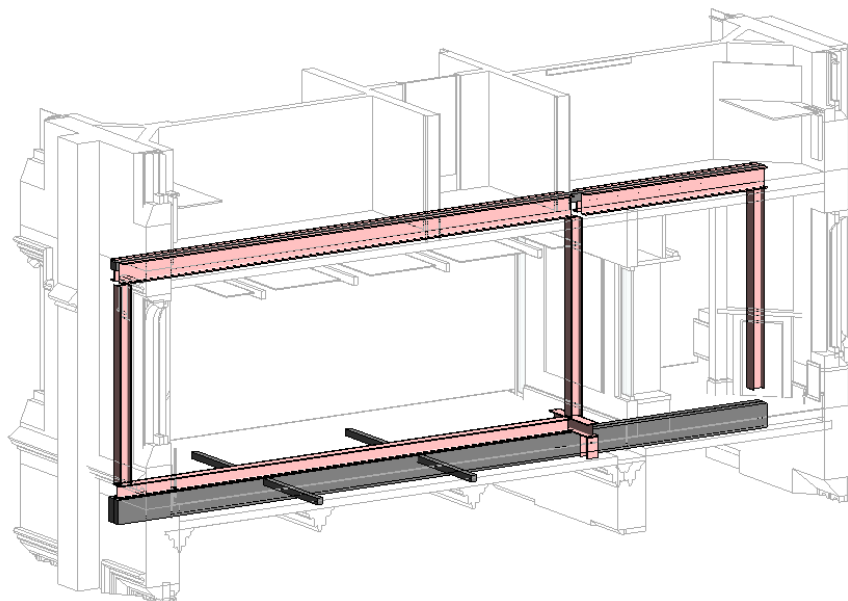
To the 2nd floor the strengthening is to be installed from above the existing timber beams. At 3rd floor the strengthening is simply installed to the underside of the floors.



Existing condition

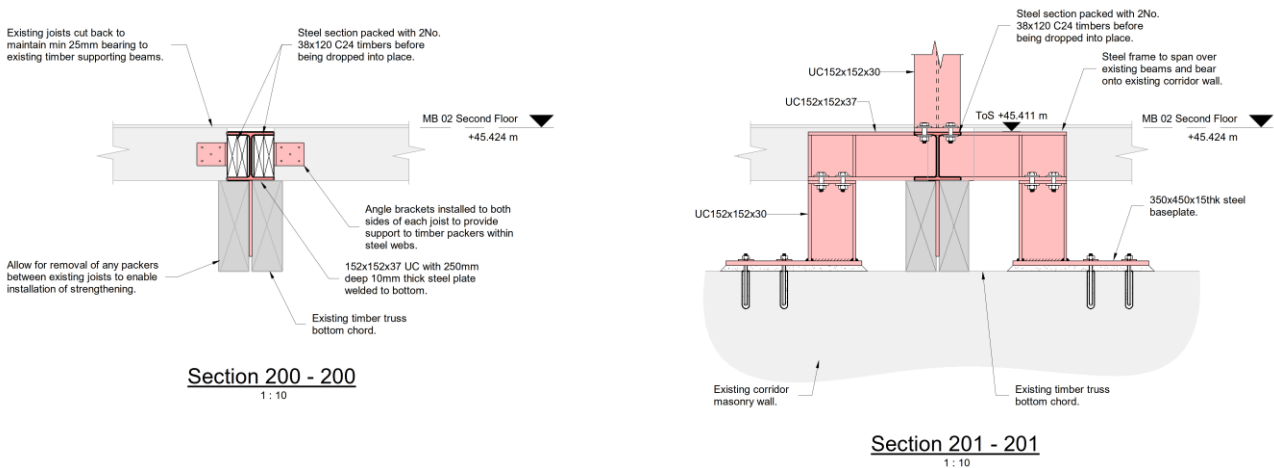


Proposed overlaid with members to be removed



Final condition

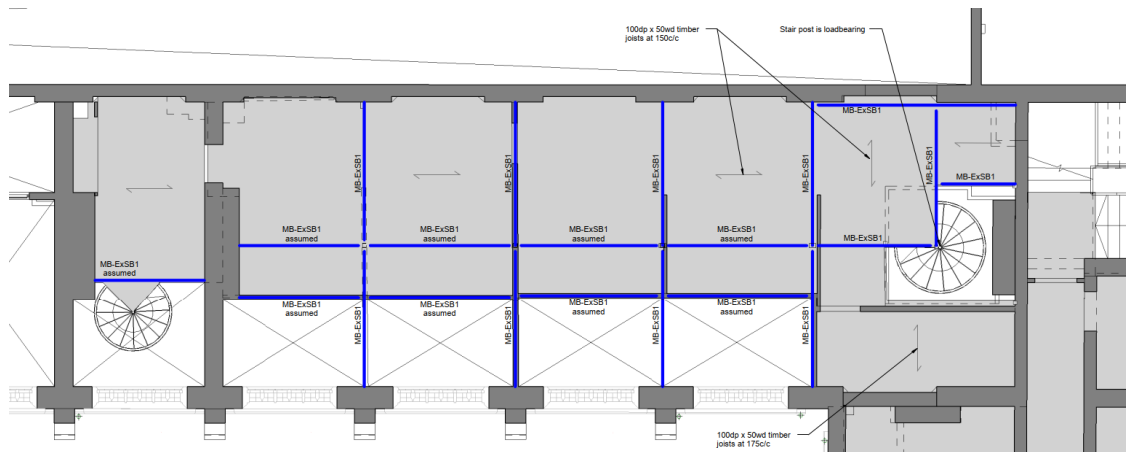
The connection details have been developed to ensure that the load transfer between the existing joists can be maintained and the plaster moulding retained. To prevent crushing of the timber at the bearing a transfer frame has been designed to allow the load to pass into the masonry wall below.



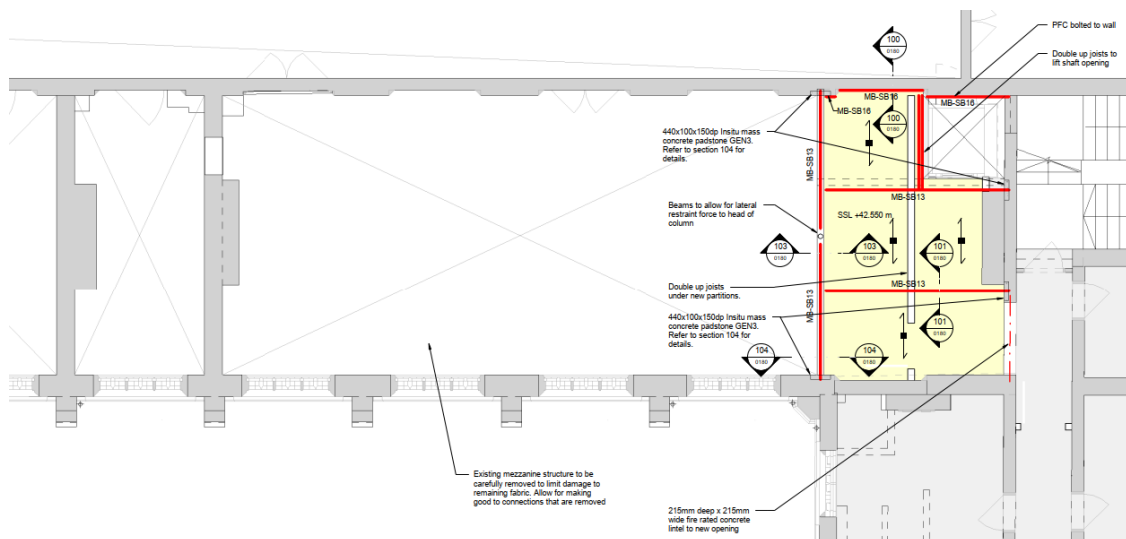
Details of proposed strengthening

2.2 Removal of existing mezzanine at first floor level

At first floor level, a mezzanine floor was added to the main building in 1989 and is to be removed as part of the proposed works. A small area to the north of building is to be reinstated where the existing mezzanine is considered not adequate.

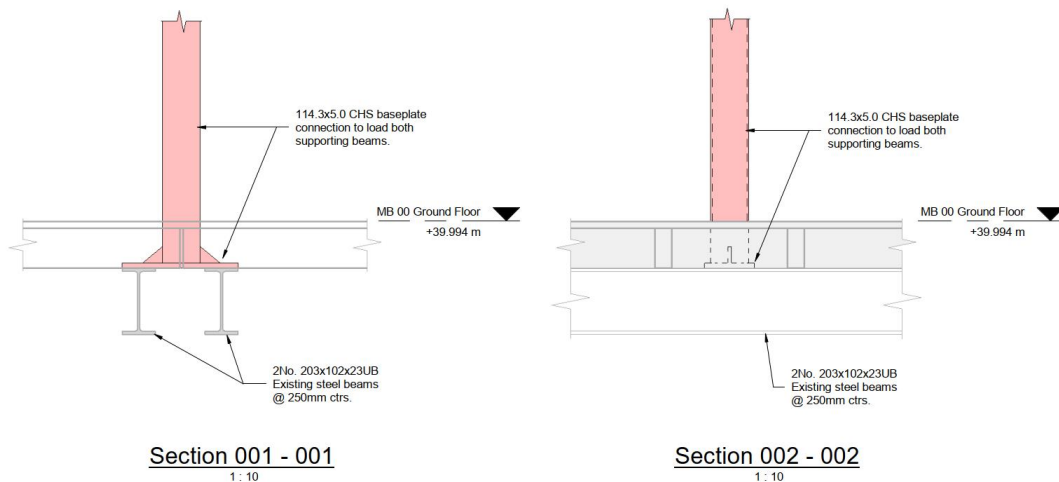


Existing mezzanine floor, at first floor level



Proposed mezzanine floor, at first floor level

A CHS column supports the proposed mezzanine at midspan along its perimeter. The column is supported on existing steel beams within the ground floor. Here, and elsewhere, the load of the reinstated mezzanine on the existing structure has been checked for the altered load paths, and the capacity of the existing structure is suitable in the proposed condition.



Proposed connection of new mezzanine column to existing ground floor beams

3.0 George House

Whilst parts of George House do pre-date the main building, it is noted that the proposed alterations and wall removals are within the later development. The exact date of the works is unknown. The Heritage Significance Appraisal states:

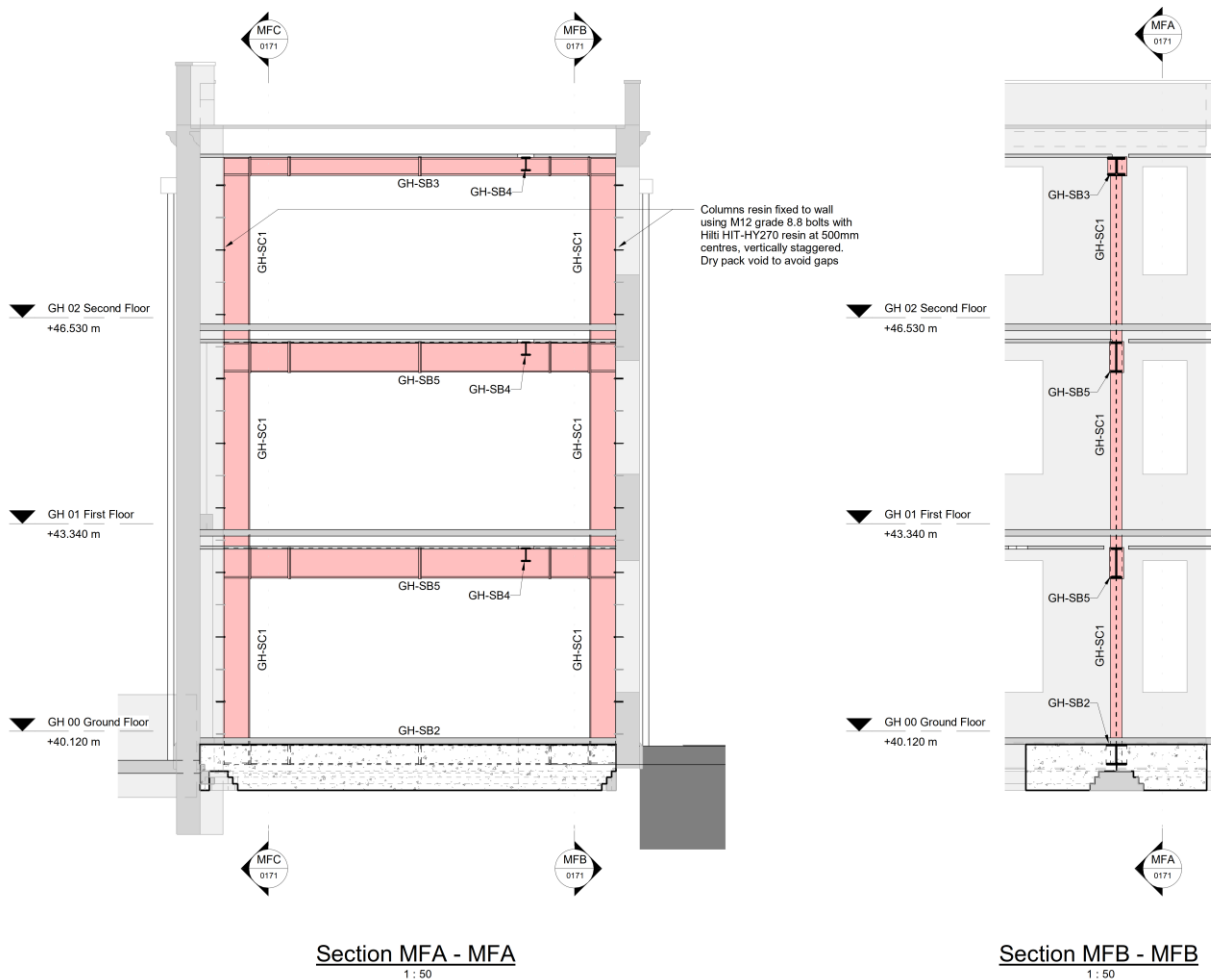
“Although George House pre-dates the principal building, it has been substantially altered both internally and externally, to the extent its former historic interests can no longer be appreciated or understood.”

The rib and pot floors are not original and as such not an early example of this form of construction. They are therefore not considered to be of higher significance than other fabric.

3.1 Temporary works

The temporary works for the wall removal and installation of the moment frame to George House is less complex than that of the main building wing works as there is no wall to remain on an upper level.

Once the slabs are propped and supported the walls can be removed and the new frames installed. Openings for columns to pass through floors are to be minimised to reduce the amount of infill required. Once dry packed the temporary propping can be removed and the load transfer is complete.



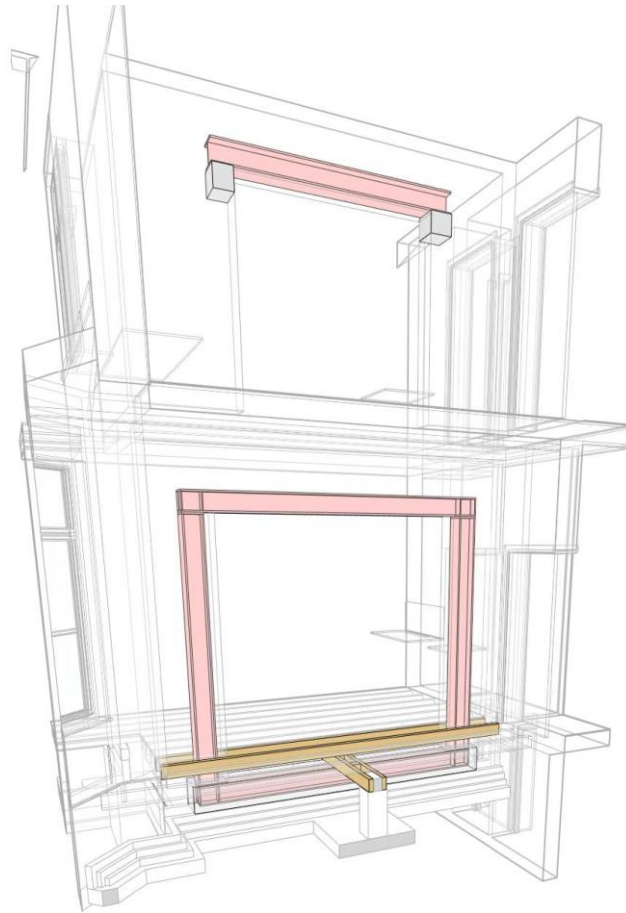
Section through proposed moment frames with propping indicated

The slab will act as a diaphragm and temporarily distribute stability forces into the remaining walls. The moment frame restores the original load paths once the works are complete.

The size of the opening for the columns is to be agreed with the contractor. It is proposed these are kept as small as possible so that a new infill stitch can be cast to transfer load in the final condition.

4.0 Red House

The design for the openings to Red House has developed to a reduced extent. At first floor the opening width has reduced and the remaining brick buttress can resist the applied wind loading. At ground floor a larger opening is required architecturally. To support the brick buttress at 1st floor and maintain original load paths this has been retained as a box frame. With the opening height reduced needle propping to the wall can occur below the 1st floor further reducing the impact of the alterations.



3D view of proposed alterations

5.0 Queen's Road

The works to remediate the bow to the perimeter wall does not form part of this Listed Building Consent application. There are no indications that it is unstable at present however it is going to be addressed as part of the wider project.