

Structural Design Statement

1 Introduction

Heyne Tillett Steel have been appointed by South Bloom Ltd to undertake structural design for the proposed refurbishment and extension of 6 Bloomsbury Square, London. The building is Grade II* listed, and the structural work has been designed with this in mind.

Both project director Tom Steel and senior engineer James Mumford are chartered members of the Institution of Structural Engineers and have extensive experience working on listed buildings throughout London.

This statement summarises the proposed scheme and structural implication of the alterations. It is based on architectural proposals prepared by Flanagan Lawrence, and mechanical and electrical proposals by P3r Engineers Ltd.

2 Existing Building

The existing building is of load bearing masonry wall construction, typical for a building of its age. Floors to the upper levels are timber, with joists spanning side to side onto the masonry walls and intermediate beams. At ground level, the floor is assumed to be concrete in the entrance hall and stair area, supported on load bearing masonry walls, with timber floors to the front and rear rooms. The roof is a series of timber pitched roofs with flat areas in between, and historical skylights. The main stair is a cantilevered stone stair between ground and first floor level, and a timber stair between first and second.

The secondary staircase is a cantilevered stone construction, and is believed to have been made narrower during previous work to install a lift shaft within its centre.

There is evidence that movement has occurred in the past within the masonry at first floor level, and whilst the cracks will be repaired as part of the proposed works, the building appears stable in the current state. There are some rotten timber elements at roof level that are not fit for purpose; this will be addressed as part of the proposed work.

3 Proposed Alterations

The existing building structure is being retained wherever possible with minimal intervention, except where necessary to replace damaged structure. Thus the majority of the existing building structure is unaffected by the proposed works.

The proposals involve work in the following key areas:

- New risers are being formed through floors, with services passing through the spaces between existing joists wherever possible. Thus the existing timber elements of the building are kept so far as practicable.
- The rotten and damaged roof structure to the rear of the building is to be replaced in a like for like fashion. The damaged access stair to the roof is to be removed and the opening reinforced with timber where required, installed alongside the existing rather than through.
- The new extension is largely self-supporting, with minimal fixings back to the existing rear wall, thus retaining the existing building fabric. It will be formed with a lightweight steel frame, with a timber joist and plywood roof, and predominantly glazed walls. The foundations will be shallow concrete pads and strips, excavated to a level approximately coincident with the existing footings. The existing

foundations will not be damaged or undermined in any way.

- The lift shaft will be raised from the existing, relatively modern blockwork lift shaft construction. The extension will have minimal interaction with the historic building fabric, whilst the new lift will not interact with the retained cantilevered stone stair that surrounds it.
- New openings within walls are to be made for access between rooms. Wherever possible, these are either enlarging existing openings or re-opening an area that was infilled during previous work. New precast concrete lintels may be installed if required, subject to inspection of the existing lintels on site.
- It is not anticipated that the proposed alterations will have a significant impact on the loads experienced by the party walls or on the bearing pressures beneath at foundation level.
- The alterations proposed are not expected to increase the loads on the historic building fabric from the existing state, save for minor load increases due to new plant at roof level.