Structural Design Studio Ltd
Studio 3, Three Eastfields Avenue
London
SW18 1GN

Structural Design Studio is a limited company registered in England and Wales no. 10727757

c/o Quinn Architects
9 Bedford Row
London
WC1R 4BU

9 Bedford Row, WC1R 4BU – Proposed Extension and Refurbishment Works

Introduction

Structural Design Studio Limited were appointed by the Client and owner of the property, to advise on the current structural condition of 9 Bedford Row, WC1R 4BU and advise on the structural implications of the proposed alterations.

This report has been compiled by Sarah Wadley MEng CEng MIStructE, a member of the Institute of Structural Engineers and Director of Structural Design Studio Limited (SDS Ltd). This report is for the sole use of the client and the Local Authority Planning department and should not be relied upon by any third parties.

The purpose of this report is to comment on the proposed structural strengthening works required and also the structural impact of the demolitions and proposed internal alterations. This report is required by the local authority for Listed Building Consent.

Sarah Wadley of SDS visited the building on 29th June 2023. Access was gained to all parts of the property, except where noted on the drawings. No access was available onto the roof or neighbouring properties or gardens.

No opening up works or intrusive site investigation works were completed during our initial visit.

General Description of Existing Building and Site

The existing building consists of two interconnected brick buildings. There is a Grade II* Listed mid-terraced house to the front and a more modern building built in the 1990s to the rear. The main historic house is set over five storeys including a full basement while the rear building is three storeys high.

We understand that the main house was constructed between 1717-1718 by Robert Burford. The buildings are of brown brick construction with timber floors throughout. The existing roof is a double pitched roof with a central valley gutter running front to back. There is an existing basement under the property with brick vaults to the front at lower ground floor level. Internally, a lot of the original timber panelling is still present. The central spine walls adjacent to the main stair are of brick construction with timber stud walls elsewhere in the property.

The layout of the building is typical of the period and is two rooms deep with a central stair between. A closet wing extends up to the third floor which is accessed through the rear rooms at each level. To the rear of the main house there is a modern link building at ground floor level which connects to the new build 3 storey property at the end. There is a small courtyard garden which extends over the existing rear vaults.

In some areas the floor boards had been locally lifted and we could ascertain that the existing timber joists span from side to side from party wall to two timber bressummer beam which are located between the windows. The

timber bressummer spans from the front to the rear of the property and is supported on the masonry spine walls. The joists were typically 200mm deep x 50mm wide at 400mm centres.

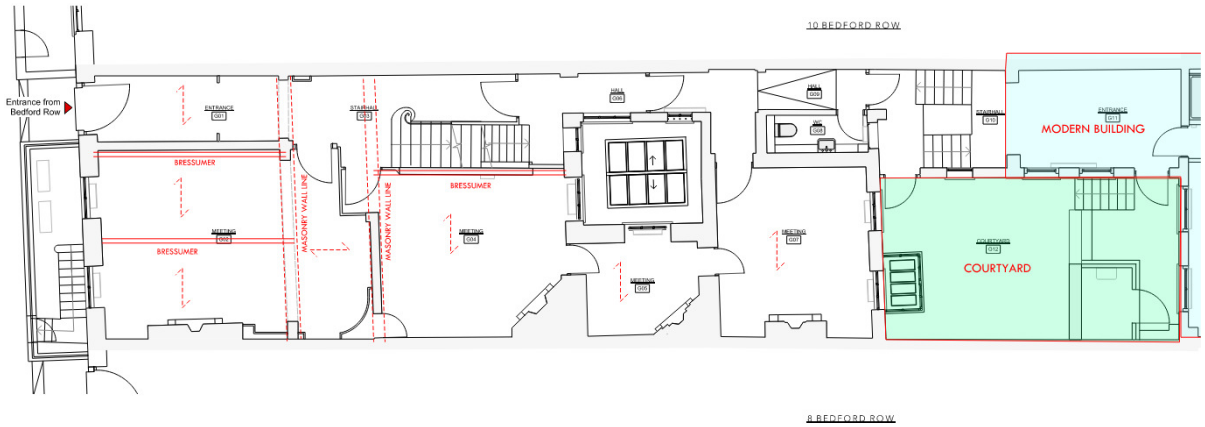


Image 1 – Typical Floor Construction

Proposed Alterations

The current proposals involve the following:

- Change of use from office to residential of the main house
- Full internal refurbishment of the Grade II* Listed house and rear property including internal alterations
- Demolition of the small outrigger where the rear building steps out
- Demolition of the link connecting the two buildings
- New services throughout

Third Floor

The current proposal is to move the door between the front two rooms. The wall in question appears to be of modern timber stud construction and is non-structural. The opening can therefore be made and a new timber lintel installed without affecting the structure of the building.

Second Floor

The current proposal is to remove the existing partition in the front right hand room. These partitions appear to be of modern timber stud construction and are non-structural. Therefore these can be removed without affecting the existing structure of the building. A new door is being made between the bathroom and the rear left hand room. There appears to have been a door in this location in the past which has been boarded over therefore we don't foresee any structural works to reinstate this.

First Floor

There are no alterations proposed to the layout of the main house at this level.

A portion of the existing link building is to be demolished and there are alterations to be made to the rear house but these works are remote from the main house and shouldn't have any adverse impact on the main building.

Ground Floor

The majority of the internal alterations to the property are proposed at this level. Refer to drawings within the appendix to show assumed new structure.

The modern link building is proposed to be demolished so that the courtyard garden extends the full width of the property. Where the link building is adjacent to the existing Listed Building then the contractor should take care to ensure that there is no damage to the existing fabric by cutting any ties or fixings prior to demolition. The roof and roof lantern in the external courtyard is to be removed to create a new external courtyard at basement level.

There are some modern internal timber partitions to be removed between the front and rear meeting room. The contractor should carefully lift the floor boards above the location of the walls being removed prior to demolition to ensure that no existing structure is supported on these walls.

A new window is to be formed into the masonry wall between the kitchen and the internal courtyard.

Method Statement for Installing new window

1. Contractor to install strong boy temporary prop above new lintel location.
2. Window opening to be cut with an angle grinder.
3. New concrete lintel to be installed to the inner leaf with a traditional brick arch lintel to the external leaf
4. Drypack between the top of the lintel and to wall above
5. Temporary propping to be removed

The existing wall between the hallway, WC and rear meeting room are proposed to be demolished and a flat roof installed to match the height of the existing roof over the meeting room. This will create a full width kitchen. A new roof lantern is proposed over the kitchen. This will be trimmed out with new steel beams.

Method Statement for Demolition of walls and Installing new roof lantern

1. Existing roof coverings to be removed and lower level roof over link to be demolished. Contractor to ensure any fixings into the existing fabric are carefully cut back and removed.
2. Temporarily prop retained existing roof joists
3. Demolish the existing masonry walls from top down ensuring care is taken when demolishing adjacent to the existing fabric.
4. Carefully cut holes in brickwork walls by hand in location of new padstones
5. Cast new concrete padstones
6. Cut existing roof rafters in location of the new roof lantern.
7. Insert new steel trimmers around roof lantern perimeter, bolting beams together
8. Install full depth timber blocking within web of beam
9. Resupport existing roof joists with expamet maxi speedy joist hangers fixed to timber blocking
10. Temporary propping to be removed and new roof coverings to be installed.

Basement Level

There are some non-load bearing modern stud partitions to be removed but there are no structural alterations at this level.

General Repairs and Relevelling

In general the building is in a fair condition for it's age and type. Generally the perimeter brick walls seem to be of sound construction and there is very little cracking evident to the external masonry walls. There has been some creep and deflection of the timber floors overtime but they appear to be in good condition. There may be some rooms that require levelling works to be completed. This can be achieved using timber firrings fixed to the top of the joists. Once the floors are exposed, if any of the timbers are found to be in a poor condition then it may be necessary to strengthen existing joists by bolting new joists to the side of the existing.

Method Statement for Levelling Works

1. In the rooms where levelling works are proposed, existing floorboards should be numbered and then carefully lifted and set aside
2. Install timber firrings by gluing and screwing to the top of the joists with no.12 wood screws at 300mm centres.
3. The existing floorboards should be re-laid in their original positions and nailed down to the joists under.

Conclusion

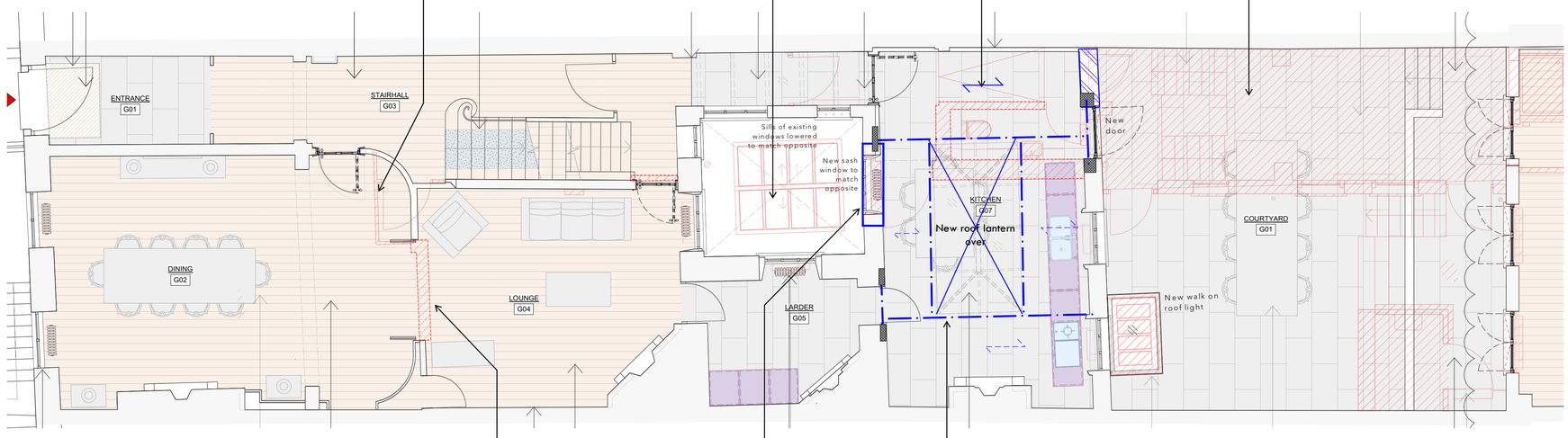
Based on our visual inspection of the existing building, the building appears to be in good condition. Some levelling and repair works may be required to the existing floors to ensure the long term robustness of this Listed Building. The architect's proposals for the demolition of the rear link and walls around the larger rear outrigger at ground floor level can be structured so that it should not have an adverse impact on the structural stability of the main house. Assuming the works are completed by a competent Contractor then these works should not have a detrimental structural impact on the existing building.

Should you have any questions regarding our assessment please don't hesitate to contact us.

Yours faithfully,

Sarah Wadley
MEng CEng MIstructE

Director I **Structural Design Studio**



General notes:

1. Do not scale from this drawing
2. To be read in conjunction with all other structural drawings and the structural specification
3. To be read in conjunction with all other relevant disciplines drawings and specifications
4. All levels, setting out, waterproofing and fireproofing to be confirmed with the Architect
5. The Contractor is responsible for the temporary stability of the existing and proposed structure throughout the works. The sequencing and method of installation should be carefully considered and the temporary works should be designed and detailed by a suitably qualified person (appointed by the Contractor) prior to commencing the works
6. Contractor to request splices if required for handling purposes

STRUCTURAL Design STUDIO

Studio 1, Three Eastfields Avenue, SW18 1GN

020 8191 8688 | www.structuraldesignstudio.co.uk

Project

9 Bedford Row, WC1R 4BU

Drawing Title:

Proposed Ground Floor Plan

Job. No.	Drawing no.	Revision
223199	S100	Preliminary

Scale	Date	Drawn by	Rev. no:
1:50@A1	July 23	SW	P1