

**STRUCTURAL INVESTIGATION REPORT AT
809 WILMSLOW ROAD, DIDSBURY, M20 2QR**



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9989	P1		1/11/20

Survey Date:	27 th October 2020. Weather dry and overcast.
Survey/ Report By:	Richard Lomax MIStructe BEng (Hons)
Client Name:	Mr. Peter Hill

Telephone: 07884 206 354 Email: Richard@Shearltd.co.uk Web: www.shearltd.co.uk

Office: 46 Penny Lodge Lane, Loveclough, Rossendale, Lancashire, BB4 8PD
Registered in England. Number 5777126

DETAILS OF INSTRUCTION

Shear Limited was instructed by the building owner Mr. Peter Hill on the 20th October 2020 to carry out a visual structural investigation at 809 Wilmslow Road, Didsbury, M20 2QR.

Shear Ltd was instructed to inspect and report on the loft space construction with a view to convert for residential purposes.

This report is written by Richard Lomax MStructe BEng (Hons).

LIMITATIONS

The report should not be construed as a valuation report and is not an inventory of every single defect, some of which would not significantly affect the use of the structure. If the report does refer to some minor defects; this does not imply that the structure is free from other such defects.

The report does not appraise the condition of dpc, possible damp penetration, condensation or the condition of the timber components with regard to rot and infestation. These issues may be highlighted as potential problems but specialist advice needs to be sought on these non-structural matters.

No building services (gas, electricity, water, heating), manholes and drainage systems, garages and other outbuildings, the boundary structures, ground floor voids, retaining walls, paths and drives, windows, doors and other joinery items, internal and external décor / plaster / ceiling finishes, rainwater goods, kitchens and bathrooms will be inspected unless noted otherwise in the report.

No other part of the structure will be exposed that is covered, unexposed or inaccessible and we are therefore unable to report that any such part of the structure is free from defect.

No comment is made in this report as to the presence of new or old mine workings, contamination, pollution, gases (such as methane or radon), springs, watercourses, sink holes, vibration, and asbestos materials.

The investigation was carried out internally within the roof space and first floor level. Further defects may be encountered upon following more extensive investigation, involving exposure of structural elements for example that may be recommended in the report.

The report does not include any calculation assessment to ascertain the structural capacity/adequacy of the structure.

Prior to the investigation the Architects existing and proposed plans were made available.

This report is intended for use only by Mr. Peter Hill and his appointed Architect in relation to converting the loft space for residential purposes. No other third party may use this report without the written consent of Shear Ltd.

STRUCTURE DESCRIPTION

The structure is basically a Grade 2 listed two storey semi-detached building built circa 1900 on a flat residential area fronting Wilmslow Road.

The roof is slate pitched roof traditional construction off timber rafters and purlins off internal single brick wall construction.

External wall construction is 2 leaf solid brick wall construction.

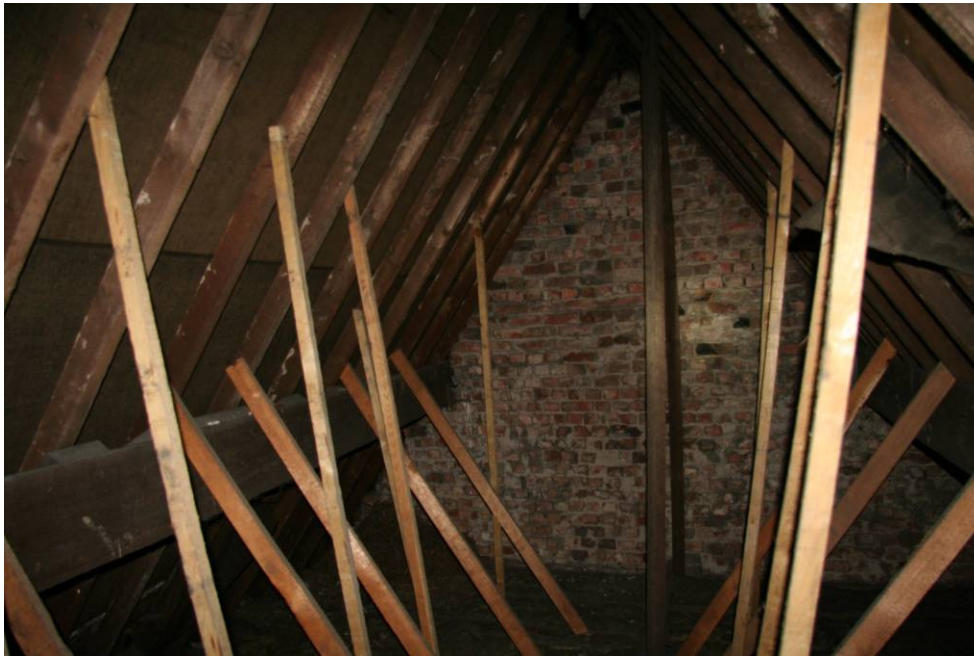
Overall stability of the structure appears to be provided by masonry cellular wall and timber diaphragm floor/ roof construction.

Access to the roof void via hatch located above first floor landing.

The roof void to number 809 Wilmslow Road is split into 2 sections divided by the landing wall – the front and rear sections. To the side the neighbouring roof void of number 807 Wilmslow Road is accessible – this roof void was not surveyed but appeared of similar construction.

FRONT ROOF VOID INSPECTION FINDINGS

The larger front section roof consisted of steep pitched 3" deep x 2-2.5" timber rafters at circa 16" centres with mid-span timber purlin measuring approximately 11" deep x 3" wide, refer photograph P1 below.



P1

Circa 1" thick ridge board evident to ridge line.

Ceiling members measured 2.5" deep x 1.25" wide at 16" centres. Timber straps fixed off rafters and purlins to ceiling members evident in sporadic locations – considered to be added at a later stage in the buildings life. Ceiling members tie the roof structure together above wall plate level (evident by sloping ceiling at first floor level).

Top side of purlins have been chamfered and in cases battened off to receive timber rafters. Purlins supported off timber wall plates to internal walls and brick bearing to external walls – no significant loss of bearing evident due to structural movement.

No signs of significant fissures or shakes to purlin members.

No significant bowing evident to purlin and rafter members.

Bird nesting and dead pigeon evident to front void section towards gable pike fronting Wilmslow Road.

Timber rafters fixed off wall plate spanning along face of external chimney stack, refer photograph P2 below.



P2

REAR ROOF VOID INSPECTION FINDINGS

The rear section roof consisted of similar steep pitched 3" deep x 2-2.5" timber rafters at circa 16" centres with mid-span purlin measuring approximately 9" deep x 3" wide, refer photograph P3 below.



P3

Ceiling members measured 2.5" deep x 1.25" wide at 16" centres. Timber straps fixed off rafters and purlins to ceiling members evident in sporadic locations – considered to be added at a later stage in the buildings life. Ceiling members tie the roof structure together above wall plate level (evident by sloping ceiling at first floor level).

Top side of purlins have been chamfered and in cases battened off to receive timber rafters. Purlins supported off timber wall plates to internal walls and brick bearing to external walls – no significant loss of bearing evident due to structural movement.

No signs of significant fissures or shakes to purlin members.

No significant bowing evident to purlin and rafter members.

Rafters seated off large timber bulkhead (understood to form valley with neighbouring roof) – evidence of historic water ingress evident, refer photograph P4 on the following page.



P4

Timber rafters fixed off wall plate spanning along external rooflight over stair landing, refer photograph P5 below.



P5

CONCLUSION/ RECOMMENDATIONS

Generally, the timber roof structure is in fair condition considering its age. The Author would recommend a more closer inspection to elements local to the external fabric once proposed works are underway for water ingress/ rot infestation – purlins and rafter ends embedded in the external wall in particular. The timber bulkhead forming the valley to rear of the property also requires further close examination.

It is evident from the survey that the ceiling members are not of sufficient size to support residential floor loadings to British Standards. New timber floor joists will be required to replace existing ceiling members or run alongside.

Steelwork will be required to support the new floor joists inboard of the eaves and possibly a further mid-span steel to reduce the joist depth/ maximize headroom – refer Sketch A on following page for indicative structural arrangement. The building owner expressed a desire to install the steelwork above the existing ceiling. This is achievable but will reduce the available headroom.

An alternative solution would be to replace/ lower the existing ceiling to achieve more headroom within the loft space. If replaced the new floor joists shall be fixed to sides of rafter feet or wall plate to prevent roof eaves spread.

Subject to design calculations the Author considers the steelwork to be out of a 152UC section sizes. This varies from 152mm to 162mm depth dependant on which serial size is to be adopted. The steelwork would need to be seated off concrete padstones built into the wall with 100mm end bearings. To ease installation, the longer steels would need two splice connections at 1/3 points i.e. to split the beam in 3 equal lengths or one splice offset from mid-span. The steelwork should be positioned to avoid existing window lintels. Where this is not practical than additional steels will be required to strengthen existing window lintels, mainly to from elevation – refer sketch A on the following page.

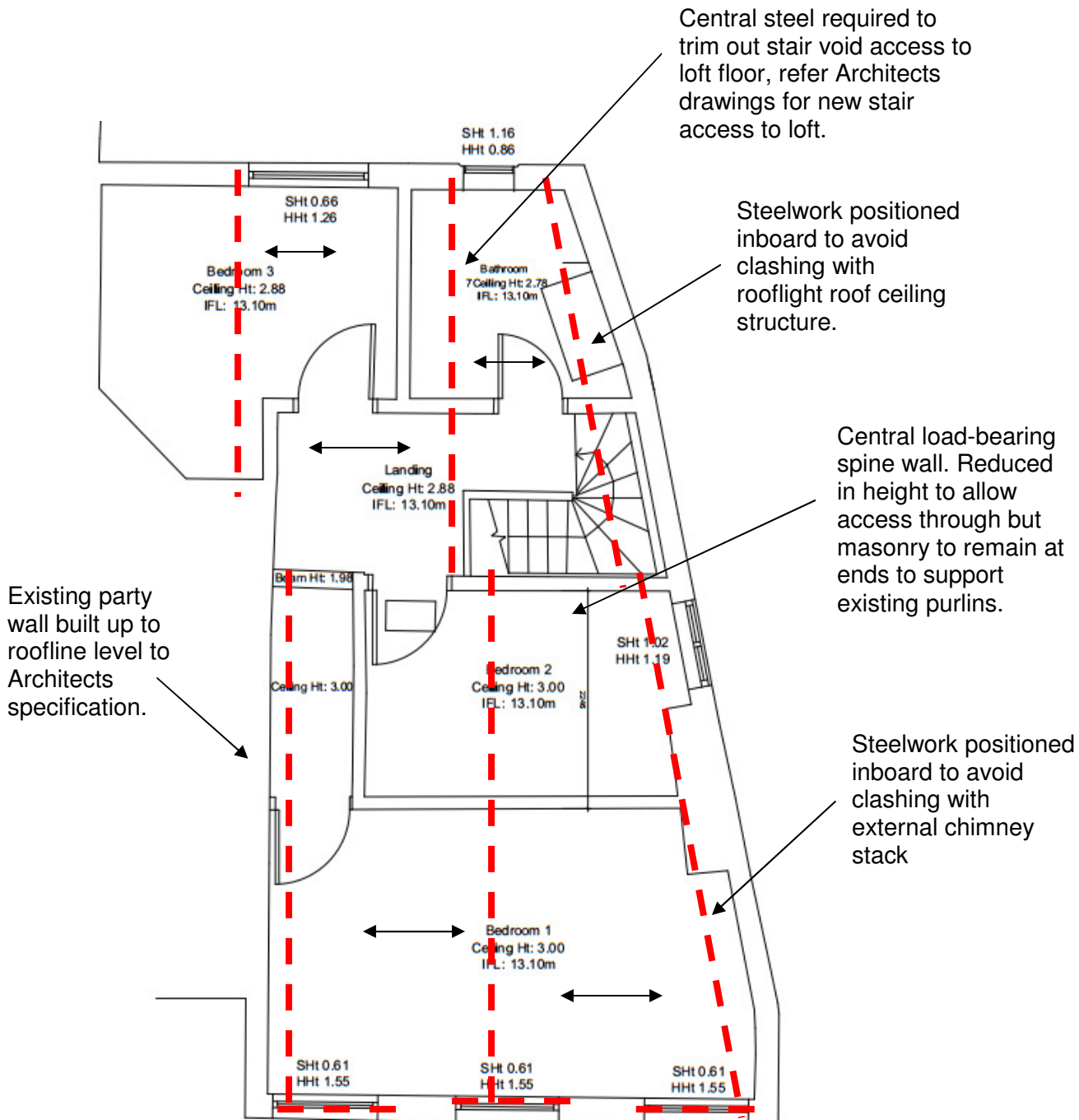
Loft floor joist depth would be kept to a maximum 150mm to match the supporting steelwork. The maximum span of a 150mm deep joist will dictate whether an additional central steel will be required to reduce the span.

The 3" deep x 2" wide timber rafters at 16" centres are of sufficient size to support any additional weight from insulation, timber battens and plasterboard subject to design calculations given their slope and continuous aspect over purlins. The increased build up will reduce headroom, which needs to be taken into account.

Rafters should be doubled up were rooflight windows proposed, subject to rooflight size proposed.

Overall, in the Authors opinion, there are no structural reasons to preclude satisfactory conversion of the loft structure.

SKETCH A – EXISTING FIRST FLOOR PLAN SHOWING PROPOSED STEELWORK OVER



--- Denotes proposed steelwork locations subject to design calculations.

↔ Denotes proposed span of loft floor joists.