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STRUCTURAL ENGINEER'S DESIGN STATEMENT

SUMMARY OF SITE INSPECTIONS, EXISTING CONDITION, AND PROPOSED STRUCTURAL WORKS

9 THE MOUNT
LONDON NW3 6SZ

Project Ref: 24-034

November 2024

Report by:

Bart Kolodziejczyk
MEng CEng MIStructE

Revision history:

Issue	Date	Details
1	03/12/2024	First issue
2	06/12/2024	Minor updates and references to previous report added, issued for submission to the Council
3	09/12/2024	Updated following further comments.

Studio Strukt Ltd
Arch D, Hackney Downs Studios
Amhurst Terrace, London E8 2BT

T: 078 508 75 271
E: bart@studiostrukt.co.uk
W: studiostrukt.co.uk

1 Introduction

The purpose of this document is to provide an outline description of the proposed structural engineering works at 9 The Mount and present the rationale behind the key design decisions made. It is intended to form part of a Listed Building Consent application.

This document follows our site inspections in June and November 2024 and should be read together with Studio Strukt's Report dated 02/08/2024.

The building is Grade II listed. Extensive structural works have been carried out in the building recently, prior to our appointment. These included, in general terms:

1. Extension and deepening to the existing basement in front of the house
2. Underpinning of the existing foundations and deepening of existing basement under the house
3. Removal of internal timber floors and studwork walls, replacement with new timber structures and some steel beams
4. Removal and replacement of timber roof structures. This also involved raising the top of front and rear wall levels in the eastern/front part of the house.
5. Other minor alterations throughout, such as replacement of internal lintels and non-original steel beams, removal of some modern brick piers and replacement with steel columns.

Our understanding is that items 1 and 2 were carried out under a Listed Building Consent and in accordance with structural engineering design by Mitchinson Macken Engineers (whose drawings formed part of the consent). These works are outside the scope of Studio Strukt's assessment and design.

We understand that there was no such consent obtained for the remainder of the recently undertaken works, and, as far as we are aware, they were carried out without a structural engineer's design or supervision.

Our brief was to carry out a site inspection of the recently installed and remaining historic structures, review record photographs taken during the recent works, and then to carry out calculations and structural assessment for the recently installed elements and key historic ones and, finally, to provide design for required strengthening/repairs/replacements.

Included in the appendices are Studio Strukt drawings, as follows:

- Appendix A: Drawings 01-03 – presenting our understanding of the existing structural layouts prior to the recent alterations
- Appendix B: Drawings 11-15 – a summary of the findings of our site inspections in June and November 2024 – these show structures as present on site on the date of this report.
- Appendix C: Drawings 21-25 – plans showing the proposed structural works (strengthening, replacement, repairs, and further changes to suit the architectural design).

2 Observations and commentary on the proposed structural works

2.1 Studio Strukt's report dated August 2024 provides a detailed description of the structural layouts and condition/quality of the works as inspected at the time. As further inspections have been carried out since, with more of the recently installed and historic structures exposed, our understanding of the current and historic conditions has also improved and evolved in some areas.

The key items, an updated summary of our findings (following an inspection on November 2024) and structural assessment are noted on the drawings appended to this report (as listed on previous page). Wherever any discrepancies between these drawings (and this document) and the report dated August 2024 exist, the former supersedes the latter.

2.2 Our understanding (and some assumptions) of the structures present on site prior to the recent works is based on site inspection of 'traces' of those elements still left in situ, and a desk study of record photographs and measured survey drawings prepared prior to these works.

2.3 Various areas of the building had undergone structural alterations in the past (before the recent interventions). There were relatively modern steel beams under the basement ceiling, many original timber lintels had been replaced with concrete elements (including above some of the windows in the front façade), and the structure within the north-west area of the house (kitchen and the covered atrium) is of late 20th century origin, with steel beams, modern brickwork piers, and concrete floors.

There is evidence of extensive historic repairs and strengthening to timber floors at 1st and 2nd floor levels, with joists coupled with new or replaced completely. Similarly, the roof over the eastern part of the house (labelled Roof 04 on the plans) had undergone significant works in the past, with all rafters paired up with new ones, and a new ridge plate.

2.4 While the recently removed timber structures are now lost and cannot be restored using the original components, our design aims to reinstate the original load paths, span directions, and structural arrangements where they have been altered during the recent works.

Where possible, we have aimed to use timber joists, beams, and studwork, but we had to introduce several steel members where the required strength or stiffness could not be achieved with timber members of reasonable size (or without using engineered wood products). These are locations where the original structure appears to have been inadequate, leading to significant movement and serious defects over time; strengthening works involving steelwork would have been necessary in these locations even if the original structure was still in place.

Also, where possible and where such details were used originally, we are proposing a 'traditional' connection between the floor joists and masonry walls, with joist ends built into and bearing directly on the masonry, but with the timber ends wrapped in plastic sleeves for protection against moisture. This detail has also been used in the recently installed floor joists in the front part of the house.

Finally, where we could prove the recently installed elements to be structurally adequate and where they follow the original spans/load paths and do not adversely affect other, historic elements, we are proposing they are kept as installed.

2.5 Despite the previous repairs, the photographic records and the measured survey clearly show that there were ongoing structural issues with the historic structure. Some of those are still present and require addressing. In particular:

2.5.1 External walls (front and gable end walls) in the north-east corner of the building are significantly deformed, leaning outwards. It has led to breaks in the continuous timber wall plate supporting the joists at 2nd floor level (and which acts as a lintel across 1st floor windows), and, most likely, also in the (now removed) wall plate above 2nd floor windows.

While this may be caused to some extent by ground subsidence over the years and possibly inadequate support provided by the original front basement structure, it also appears that the original roof structure has contributed to the problem. The original roof comprised a series of A-frames – pairs of rafters joined at the top with a ridge plate, and with timber ties at about 2/3 of the rise. Such structure is prone to outward 'spread' at the base (eaves level), pushing the supporting walls out. Based on the deformations visible on record photographs, and evidence of unsuccessful previous repairs (coupled rafters and new ridge plate), this appears to be the case in this building.

The current (recently installed) roof structure fails to address this problem and is probably making it worse. As there are no horizontal ties between the current rafters, it is even more prone to the horizontal spread than the original roof.

See photographs on Page 12 of the August 2024 report for further information.

We are proposing to strengthen and tie the external walls at the top by using a continuous steel wall plate/ring beam at eaves level, and to rebuild the timber roof to match its earlier profile and structural diagram (timber rafters with horizontal ties matching the original). The steel members have been designed to withstand the horizontal forces applied by the roof rafters and thus prevent further outward movements.

We have considered several options for this strengthening/roof rebuild, including the introduction of steel ridge beams or primary steel A-frames/trusses. While we need to provide a steel element to 'arrest' the deformations in external masonry and prevent extensive movements in the roof in the future, the chosen solution replicates the original roof's structural diagram and its interaction with the masonry walls. Of the possible options, it is the closest match to the original form and layout of the roof structure.

2.5.2 There are timber plates buried in the external walls' brickwork, certainly throughout the front and end walls of the eastern part of the building, and possibly elsewhere. Such members are prone to long-term problems due to moisture penetrating the solid masonry walls, leading to rot damage. There is evidence of such damage to timber plates throughout the front wall, weakening the brickwork in general, and affecting the bearing of the joist ends built into the wall.

We propose that all the buried timber plates are removed in short segments, and the voids filled in with brickwork matching the existing and with lime mortar. This is an intervention commonly used in historic buildings to ensure the longevity of the brickwork structures and robustness of their connections with the floors.

2.5.3 There is no connection between timber floors/roofs and masonry walls where the walls run parallel with joists/rafters. The northern (gable end) wall in the front part of the house in particular lacks (and lacked historically) any lateral restraint, which is likely to have contributed to its deformation.

We are proposing that steel restraint straps are installed between the masonry walls and the timber joists/rafters in such locations. The strap ends will be built into small padstones cast into pockets cut on the inside of the walls. Again, this is a standard detail, commonly used to improve lateral restraint to external walls in historic buildings.

2.6 In the south-western part of the building (area under Roof 03 as noted on plans), the recent works resulted in a significant change to the structural arrangement and load paths.

The original structure appears to have comprised a timber beam (running north-south) within the 2nd floor, which supported the 2nd floor/1st floor ceiling joists in this area, and a purlin and low-level studwork wall under the roof. It is possible the beam worked together with a stud wall at the 1st floor level and a joist (directly under the wall) within the 1st floor. The 1st floor joists in this area used to run in the north-south direction and were supported on load-bearing studwork wall along the ground floor hallway. All the other historic joists ran east-west.

We have carried out outline checks on these timber elements (with sizes assumed/extrapolated from photographs only) and it seems they were potentially overstressed and would have deflected significantly. It is possible this is a result of a poorly executed historic alteration, where a supporting wall might have been removed at ground floor level. It is very likely that this structure would have needed to be strengthened if it was still in situ.

In the recently installed structure, the studwork wall along ground floor hallway is no longer load-bearing, and the weight of the roof and 2nd floor is transferred down onto a very long span 1st floor joists via studwork walls. This structure is inadequate, the 1st floor joists cannot support the resultant loads.

See photographs on Pages 8, 25 and 26 of the August 2024 report for further information.

We propose to restore the original layout by replacing the 1st floor joists with new ones running north-south and rebuild a load-bearing studwork wall along the ground floor hallway. There will be a steel beam needed within the 1st floor depth, to support a 1st floor stud wall (already in place) which then carries 2nd floor joists and the roof.

2.7 The above items are what we consider to be the primary engineering concerns and major aspects of the proposed structural works. There are other works being proposed, localised or more minor/less intrusive. Refer to the appended drawings for the full scope and specification for the proposed structural interventions.

2.8 The structural works we are proposing will address and remedy, for the long term, the inherent problems with the original structure, which we believe may have led to the recent unconsented works. It is a long-term solution aiming to avoid the need for ad-hoc repairs and strengthening in the foreseeable future. The proposed works will secure the longevity of the remaining historic fabric and leave the building in a much-improved condition to face the coming decades than it had been before the unauthorised works were commenced.

DISCLAIMERS

1. This report does not constitute a full survey of the premises.

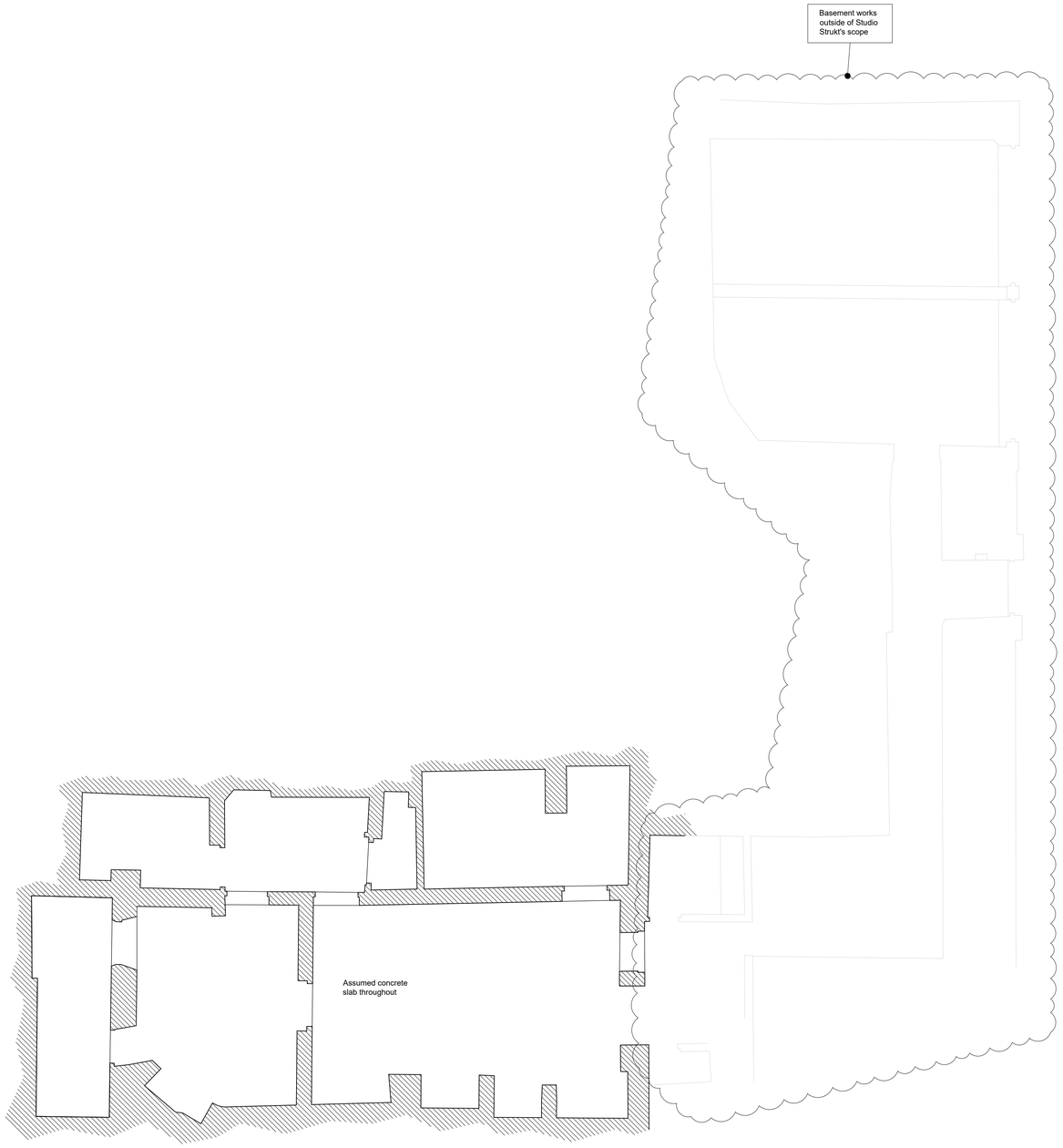
2. Except where specifically indicated in the report, woodwork, brickwork or other parts of the property or its services, which are covered, unexposed, or inaccessible, have not been inspected and this report does not constitute any warranty that any such parts of the property are free from defects.

3. This report is prepared for the use of the person, firm or company to whom it is addressed (and that of any other person, firm or company whose interest was disclosed to us prior to its preparation) and no responsibility is accepted by us to any other party whatsoever for the whole or any part of its contents.

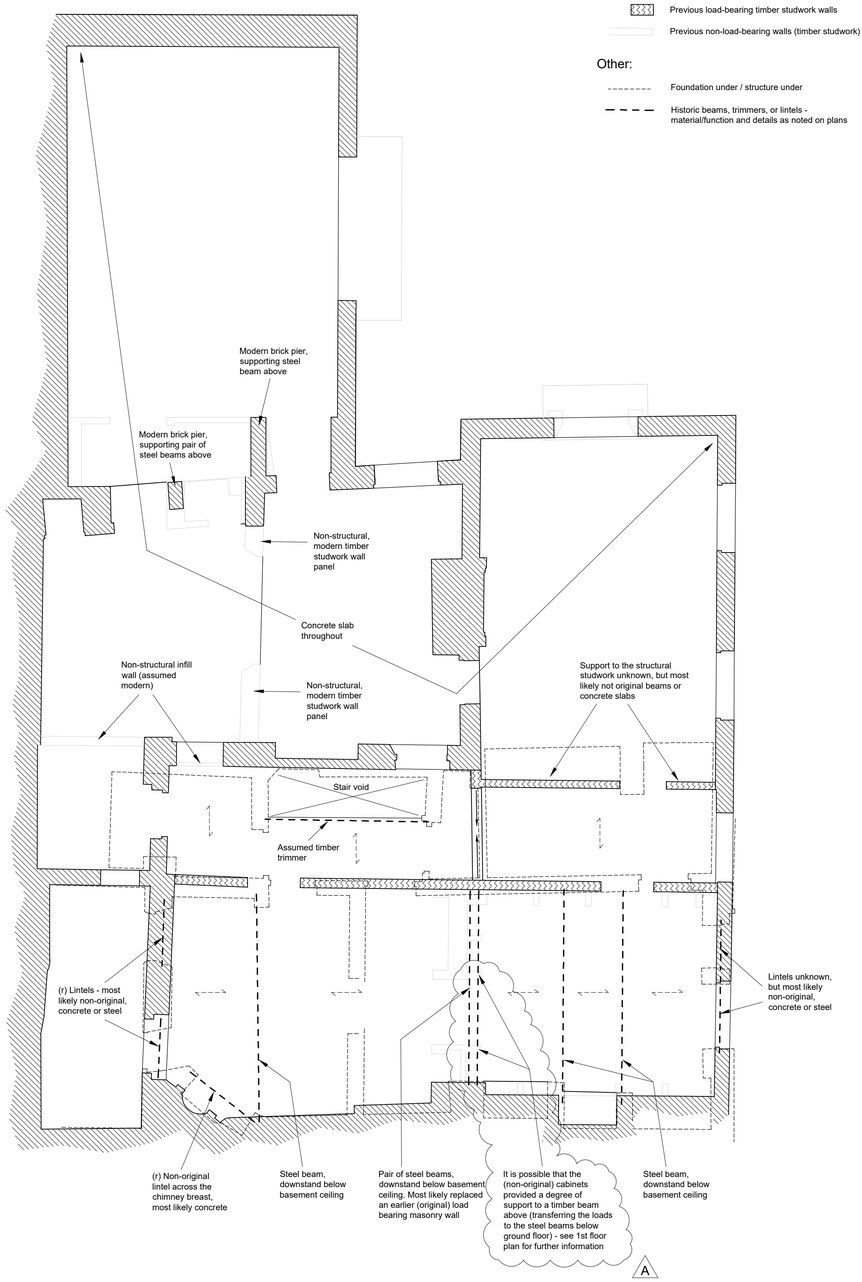
Appendix A

Drawings 01-03

Layout and condition of structure prior to recently undertaken works



Basement Plan



Ground Floor Plan

Drawing key:

Timber:

Previous timber joists direction, based on archive photographs and remains of the structures still present on site.

Previous timber rafters, arrow pointing down, based on archive photographs and remains of the structures still present on site.

Walls:

Existing masonry

Previous load-bearing timber studwork walls

Previous non-load-bearing walls (timber studwork)

Other:

Foundation under / structure under

Historic beams, trimmers, or lintels - material/function and details as noted on plans

GENERAL NOTES:

1. All Studio Strukt drawings are to be read in conjunction with the relevant Architect's, Engineer's and Specialist Supplier's drawings and specifications.
2. Do not scale from any Studio Strukt drawings. Use stated dimensions only. All dimensions to be verified on site by contractor.
3. Fire protection, thermal and sound insulation, and waterproofing are outside of Studio Strukt's scope. Any such elements are shown indicatively only.
4. The Contractor is responsible for ensuring the stability of all structures within and adjacent to the site at all times during the contract, and is to design and provide all temporary works required.
5. All work subject to Building Control approval, Party Wall agreement, and Listed Building consent. Formation levels of all foundations to be approved on site by Building Control inspector.
6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

DRAWING NOTE:

This drawing represents our understanding of the building's structure as existed prior to the recent construction works.

The layouts are based on combination of:
- remains of the former structures seen on site
- record photographs taken during the recent demolition and construction works
- measured survey drawings produced prior to the recent demolitions
- assumptions based on our knowledge of historic building methods and other examples of buildings of similar type and age

Refer to drawings series 10 for the record of existing structures (recently installed) as inspected in June and November 2024 and series 20 for the proposed structural interventions.

All structural member sizes marked with (r) have been retained during the recent works and remain in-situ.

All other elements of floor and roof structures, and internal studwork walls (whether load-bearing or not) shown on this drawing have been removed.

Masonry walls appear to generally have not been altered during the recent works, except where noted.

Rev	Description	Date	By
A	Updated where clouded	06/12/24	BK
-	Issued for comments/coordination and submission to the Council	03/12/24	BK

studio strukt
studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

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Scale	Date	By	Checked
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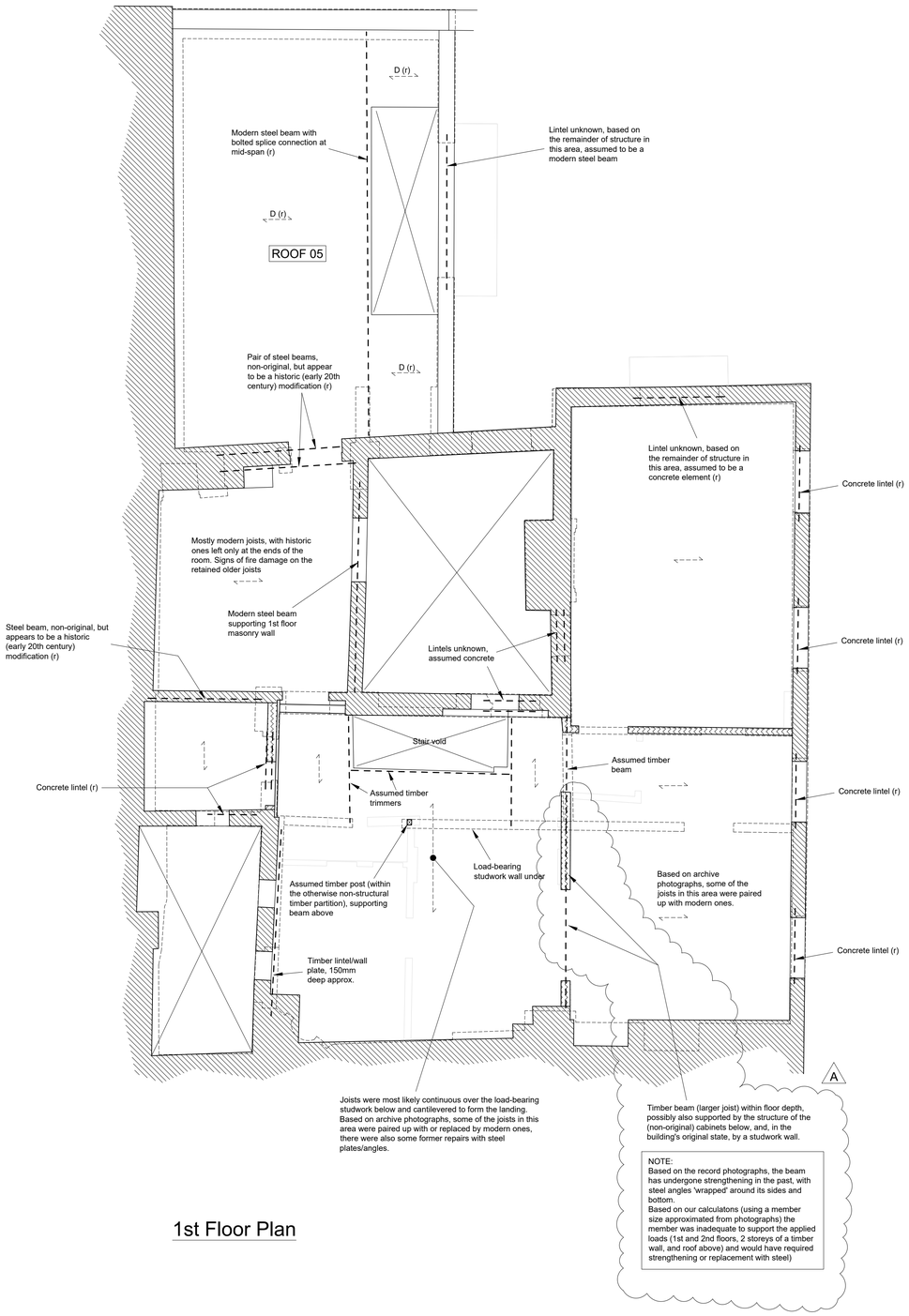
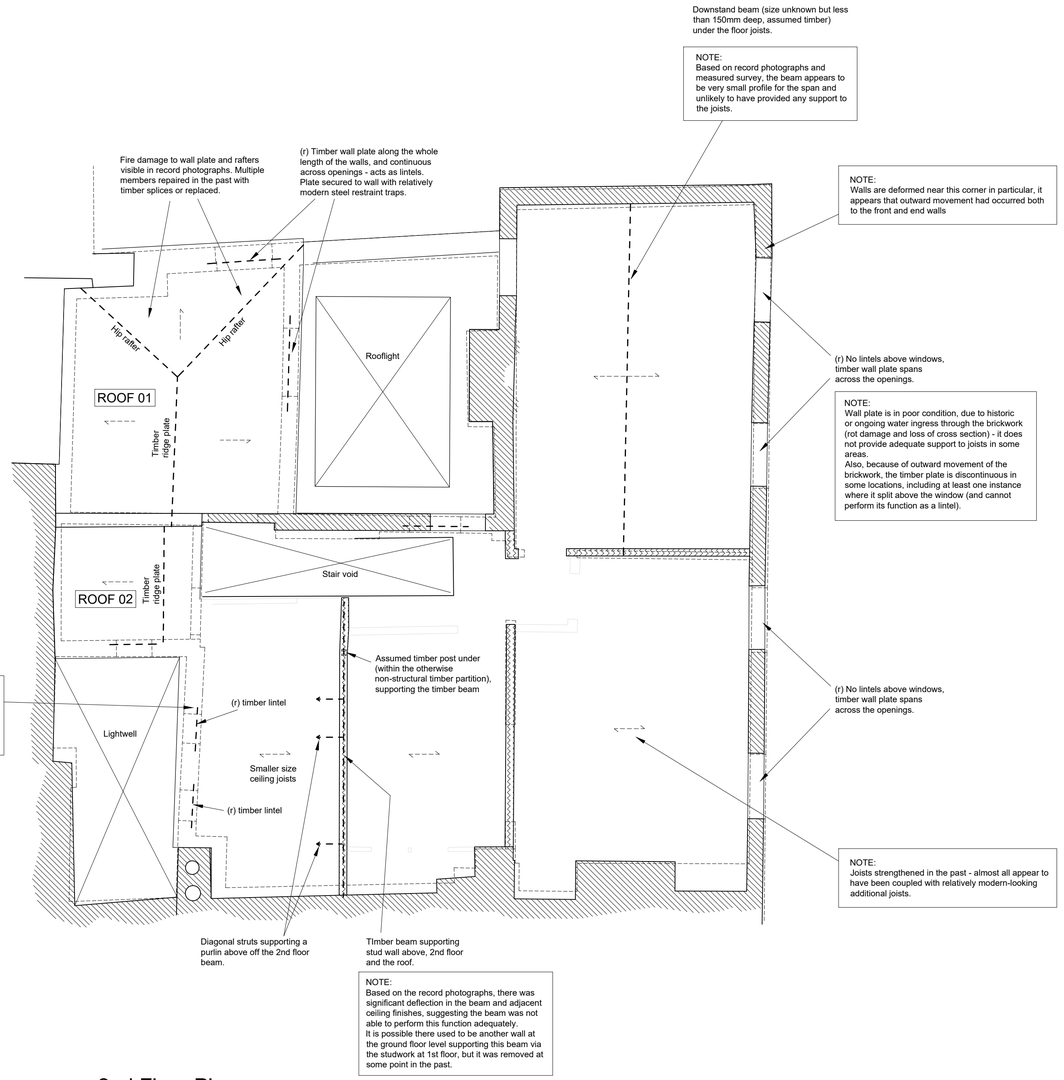
Project
9 The Mount
London NW3 6SZ

Title
Layout and condition of structure prior to recently undertaken works: Basement and Ground Floor Plans

Drawing No.	Rev.
24-034/01	A



1st Floor Plan



2nd Floor Plan

Drawing key:

Timber:

- Previous timber joists direction, based on archive photographs and remains of the structures still present on site.
- Previous timber rafters, arrow pointing down, based on archive photographs and remains of the structures still present on site.

Walls:

- Existing masonry
- Previous load-bearing timber studwork walls
- Previous non-load-bearing walls (timber studwork)

Other:

- Foundation under / structure under
- Historic beams, trimmers, or lintels - material/function and details as noted on plans

GENERAL NOTES:

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6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

DRAWING NOTE:

This drawing represents our understanding of the building's structure as existed prior to the recent construction works.

The layouts are based on combination of:

- remains of the former structures seen on site
- record photographs taken during the recent demolition and construction works
- measured survey drawings produced prior to the recent demolitions
- assumptions based on our knowledge of historic building methods and other examples of buildings of similar type and age

Refer to drawings series 10 for the record of existing structures (recently installed) as inspected in June and November 2024 and series 20 for the proposed structural interventions.

All structural member sizes marked with (r) have been retained during the recent works and remain in-situ.

All other elements of floor and roof structures, and internal studwork walls (whether load-bearing or not) shown on this drawing have been removed.

Masonry walls appear to generally have not been altered during the recent works, except where noted.

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studio strukt
studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

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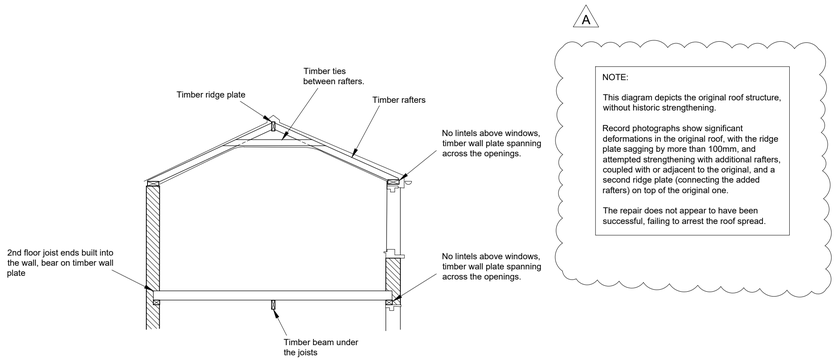
Project
9 The Mount
London NW3 6SZ

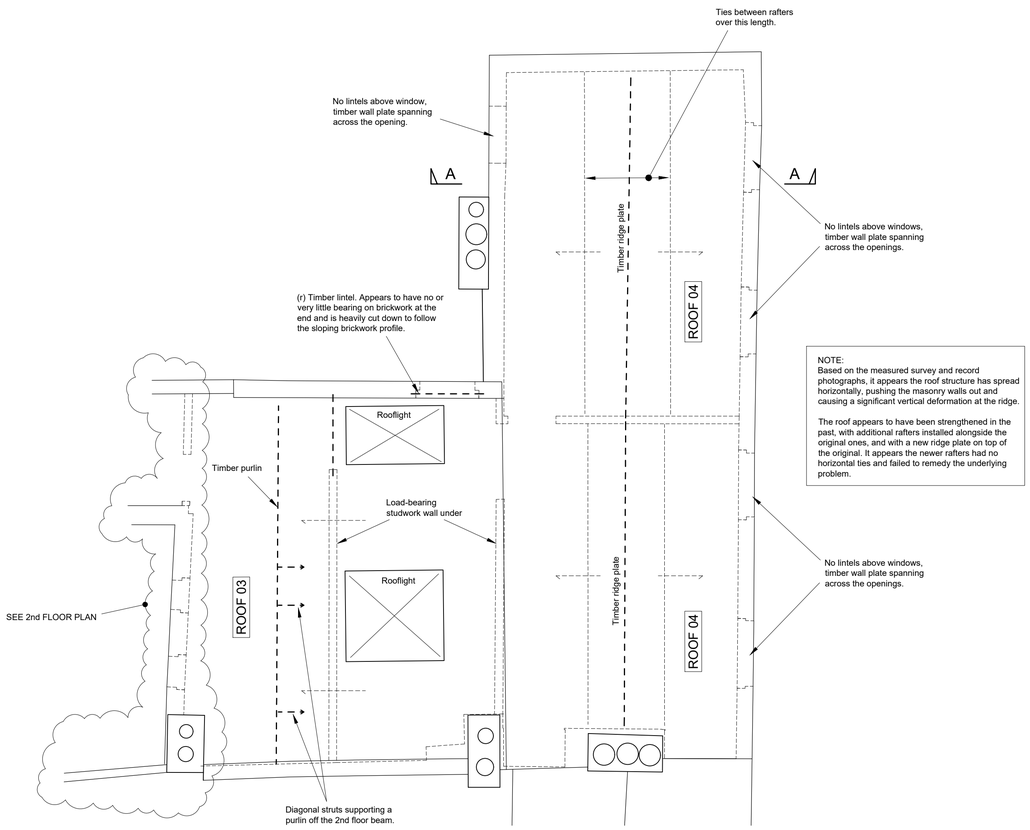
Title
Layout and condition of structure prior to recently undertaken works: 1st and 2nd Floor Plans

Drawing No.	Rev.
24-034/02	A



Section A-A

Structural diagram of the roof



Roof Plan

Drawing key:

Timber:

- Previous timber joists direction, based on archive photographs and remains of the structures still present on site.
- Previous timber rafters, arrow pointing down, based on archive photographs and remains of the structures still present on site.

Walls:

- Existing masonry
- Previous load-bearing timber studwork walls
- Previous non-load-bearing walls (timber studwork)

Other:

- Foundation under / structure under
- Historic beams, trimmers, or lintels - material/function and details as noted on plans

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6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

DRAWING NOTE:

This drawing represents our understanding of the building's structure as existed prior to the recent construction works.

The layouts are based on combination of:

- remains of the former structures seen on site
- record photographs taken during the recent demolition and construction works
- measured survey drawings produced prior to the recent demolitions
- assumptions based on our knowledge of historic building methods and other examples of buildings of similar type and age

Refer to drawings series 10 for the record of existing structures (recently installed) as inspected in June and November 2024 and series 20 for the proposed structural interventions.

All structural member sizes marked with (r) have been retained during the recent works and remain in-situ.

All other elements of floor and roof structures, and internal studwork walls (whether load-bearing or not) shown on this drawing have been removed.

Masonry walls appear to generally have not been altered during the recent works, except where noted.

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A	Updated where clouded	06/12/24	BK
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studio strukt
studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

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Project
9 The Mount
London NW3 6SZ

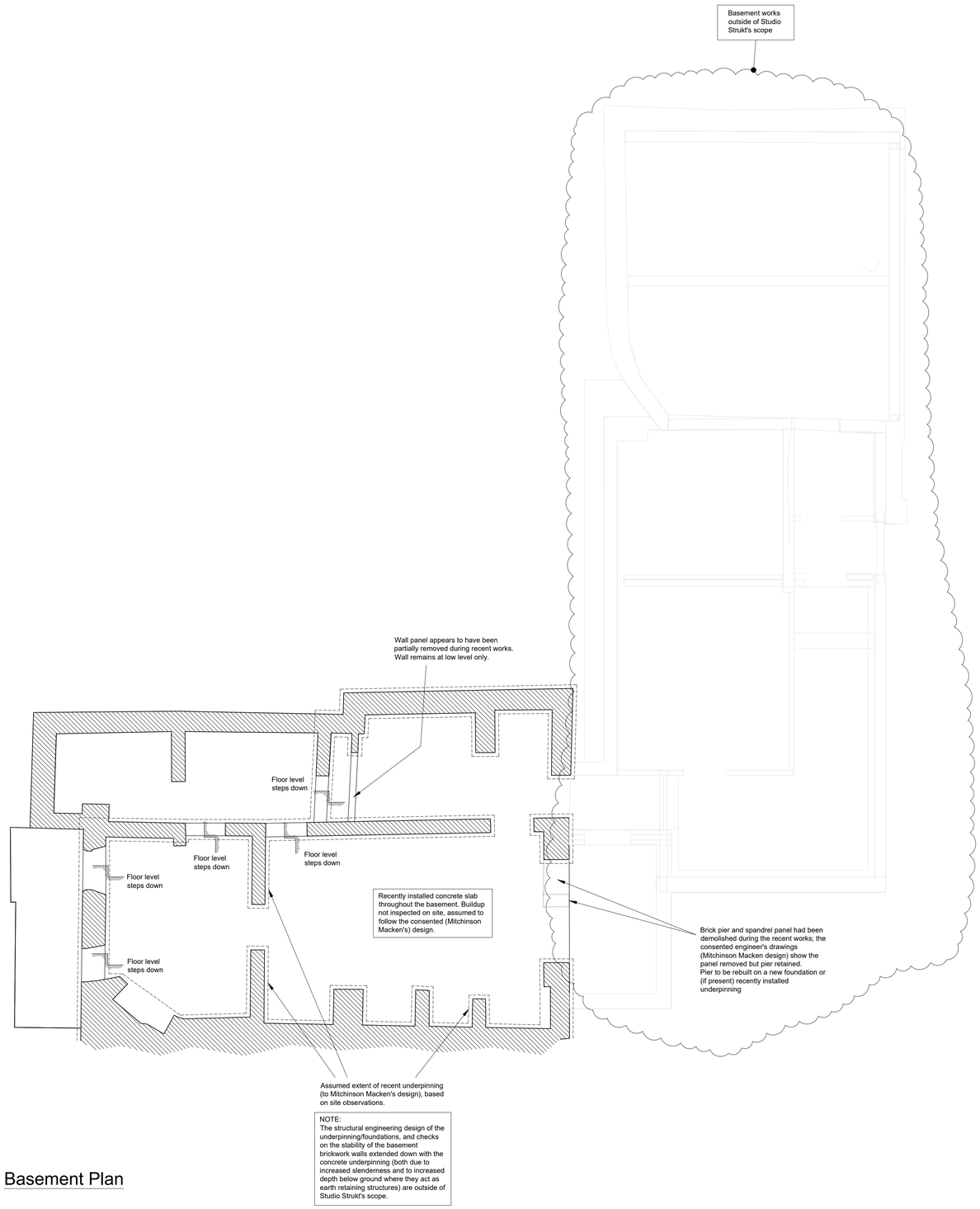
Title
Layout and condition of structure prior to recently undertaken works: Roof Plan

Drawing No.	Rev.
24-034/03	A

Appendix B

Drawings 11-15

Layout and condition of structure as seen in November 2024



NOTE:
The structural engineering design of the underpinning/foundations, and checks on the stability of the basement brickwork walls extended down with the concrete underpinning (both due to increased slenderness and to increased depth below ground where they act as earth retaining structures) are outside of Studio Strukt's scope.

Basement Plan

DRAWING NOTE:

This drawing represents a record of our site investigations carried out in June and November 2024. It shows the as-seen structural layouts and provides commentary of condition of remaining historic and adequacy of recently installed elements.

None of the structures shown have been designed or specified by Studio Strukt.

Refer to drawings series 20 for the proposed structural interventions.

Unless noted otherwise, all existing steelwork, concrete and timber structures shown on this drawing are non-historic elements installed during the recent construction works.

All historic timber, steel, and concrete members are marked with (H).

Unless noted otherwise, all masonry structures are assumed to be historic.

All existing member sizes marked with (*) are based on previous engineer's drawings and have not been verified on site. All other existing member sizes are based on on own site measurements.

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

A — Existing 175x75 C24 joists at 400-430mm c/c

B — Existing 150x75 C24 joists at 400-430mm c/c

C — Existing 100x75 C24 joists at 400mm c/c

Older existing joists:

D — (H) 150x50 joists at 400mm c/c - relatively modern. Joists inadequate for the proposed roof terrace loads, to be removed.

Walls:

- Existing masonry
- Structure demolished during recent works
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Recently installed load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx
- Recently installed load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx

Other:

- Existing foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Historic beams, trimmers, or lintels, retained during recent works - material/function and details as noted on plans
- Beams, trimmers, or lintels installed during recent works - material/function and details as noted on plans

GENERAL NOTES:

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6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

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studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

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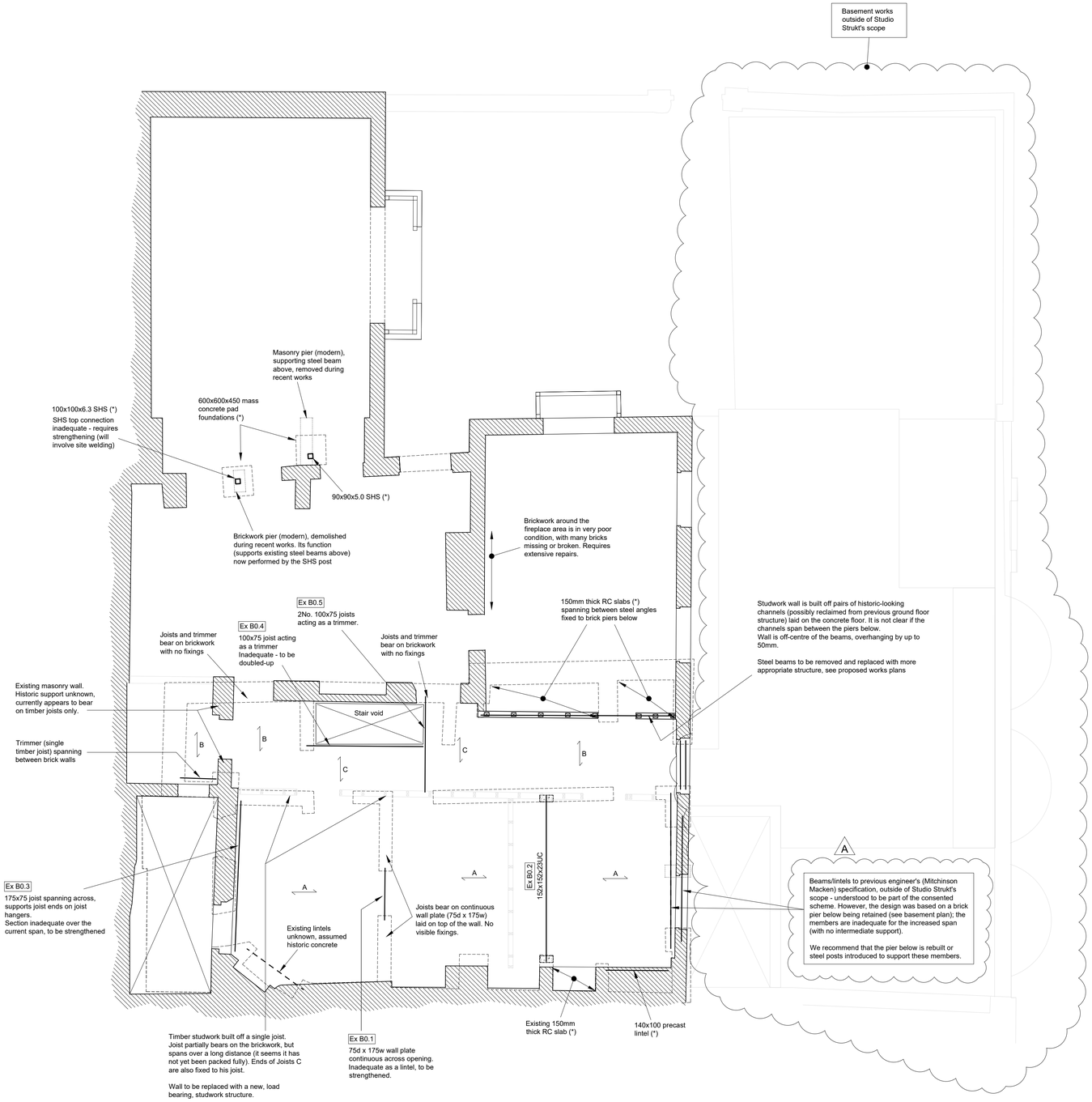
Project
9 The Mount
London NW3 6SZ

Title
Layout and condition of structure as seen in November 2024:
Basement Plan

Drawing No.	Rev.
24-034/11	A



Ground Floor Plan

DRAWING NOTE:

This drawing represents a record of our site investigations carried out in June and November 2024. It shows the as-seen structural layouts and provides commentary of condition of remaining historic and adequacy of recently installed elements.

None of the structures shown have been designed or specified by Studio Strukt.

Refer to drawings series 20 for the proposed structural interventions.

Unless noted otherwise, all existing steelwork, concrete and timber structures shown on this drawing are non-historic elements installed during the recent construction works.

All historic timber, steel, and concrete members are marked with (H).

Unless noted otherwise, all masonry structures are assumed to be historic.

All existing member sizes marked with (*) are based on previous engineer's drawings and have not been verified on site. All other existing member sizes are based on on own site measurements.

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c

Older existing joists:

- D — (H) 150x50 joists at 400mm c/c - relatively modern. Joists inadequate for the proposed roof terrace loads, to be removed.

Walls:

- Existing masonry
- Structure demolished during recent works
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Recently installed load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx
- Recently installed load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx

Other:

- Existing foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Historic beams, trimmers, or lintels, retained during recent works - material/function and details as noted on plans
- Beams, trimmers, or lintels installed during recent works - material/function and details as noted on plans

GENERAL NOTES:

1. All Studio Strukt drawings are to be read in conjunction with the relevant Architect's, Engineer's and Specialist Supplier's drawings and specifications.
2. Do not scale from any Studio Strukt drawings. Use stated dimensions only. All dimensions to be verified on site by contractor.
3. Fire protection, thermal and sound insulation, and waterproofing are outside of Studio Strukt's scope. Any such elements are shown indicatively only.
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A	Revised as clouded, issued for submission to the Council	03/12/24	BK
-	Issued for comments/coordination	28/11/24	BK

studio strukt
studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

PRELIMINARY
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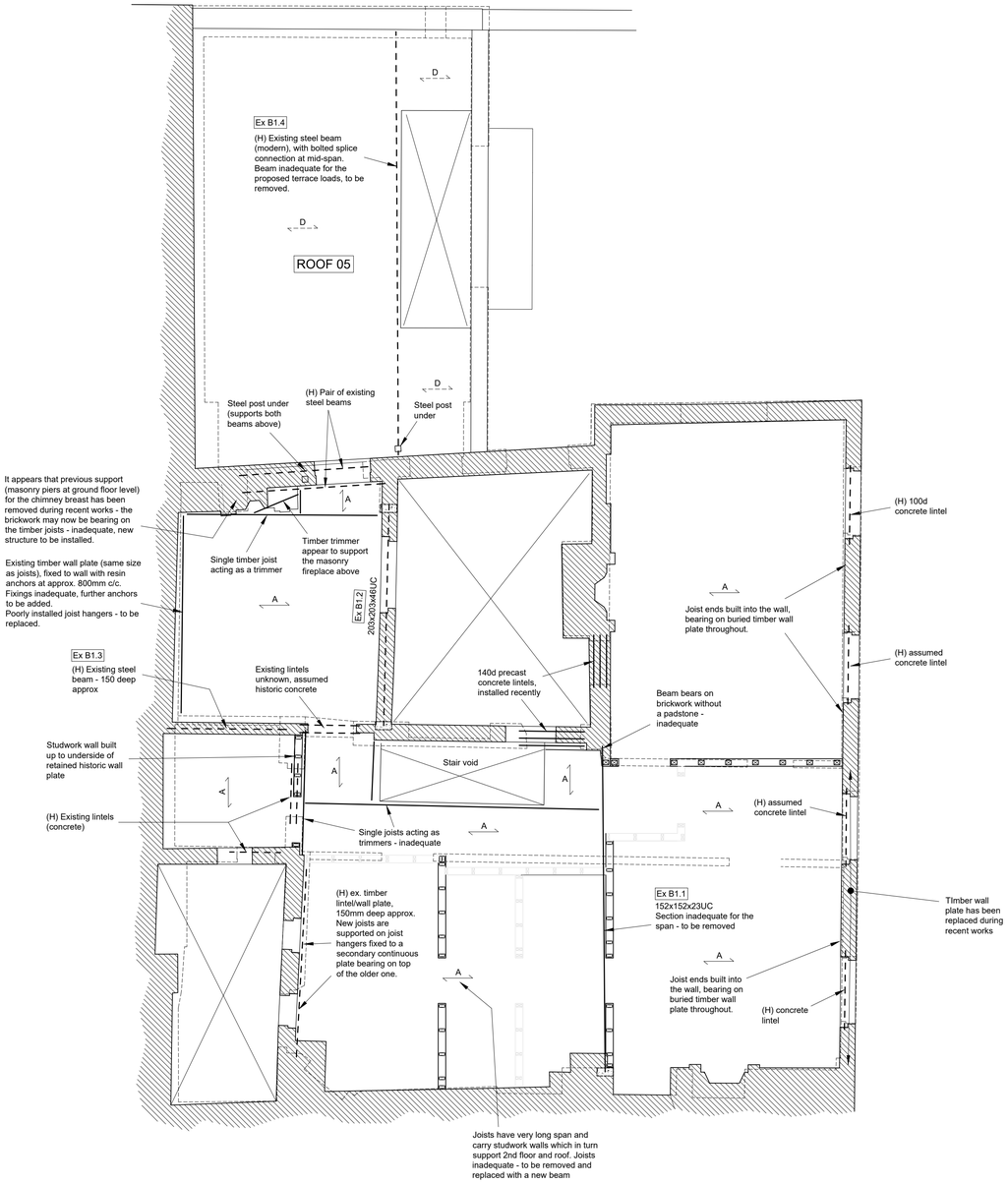
Scale	Date	By	Checked
1:50 @ A1	15/11/2024	BK	

Project
9 The Mount
London NW3 6SZ

Title
Layout and condition of structure as seen in November 2024:
Ground Floor Plan

Drawing No.	Rev.
24-034/12	A



1st Floor Plan

DRAWING NOTE:

This drawing represents a record of our site investigations carried out in June and November 2024. It shows the as-seen structural layouts and provides commentary of condition of remaining historic and adequacy of recently installed elements.

None of the structures shown have been designed or specified by Studio Strukt.

Refer to drawings series 20 for the proposed structural interventions.

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Unless noted otherwise, all masonry structures are assumed to be historic.

All existing member sizes marked with (*) are based on previous engineer's drawings and have not been verified on site. All other existing member sizes are based on on own site measurements.

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c

Older existing joists:

- D — (H) 150x50 joists at 400mm c/c - relatively modern. Joists inadequate for the proposed roof terrace loads, to be removed.

Walls:

- Existing masonry
- Structure demolished during recent works
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Recently installed load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx
- Recently installed load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx

Other:

- Existing foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Historic beams, trimmers, or lintels, retained during recent works - material/function and details as noted on plans
- Beams, trimmers, or lintels installed during recent works - material/function and details as noted on plans

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London NW3 6SZ

Title
Layout and condition of structure as seen in November 2024:
1st Floor Plan

Drawing No.	Rev.
24-034/13	A

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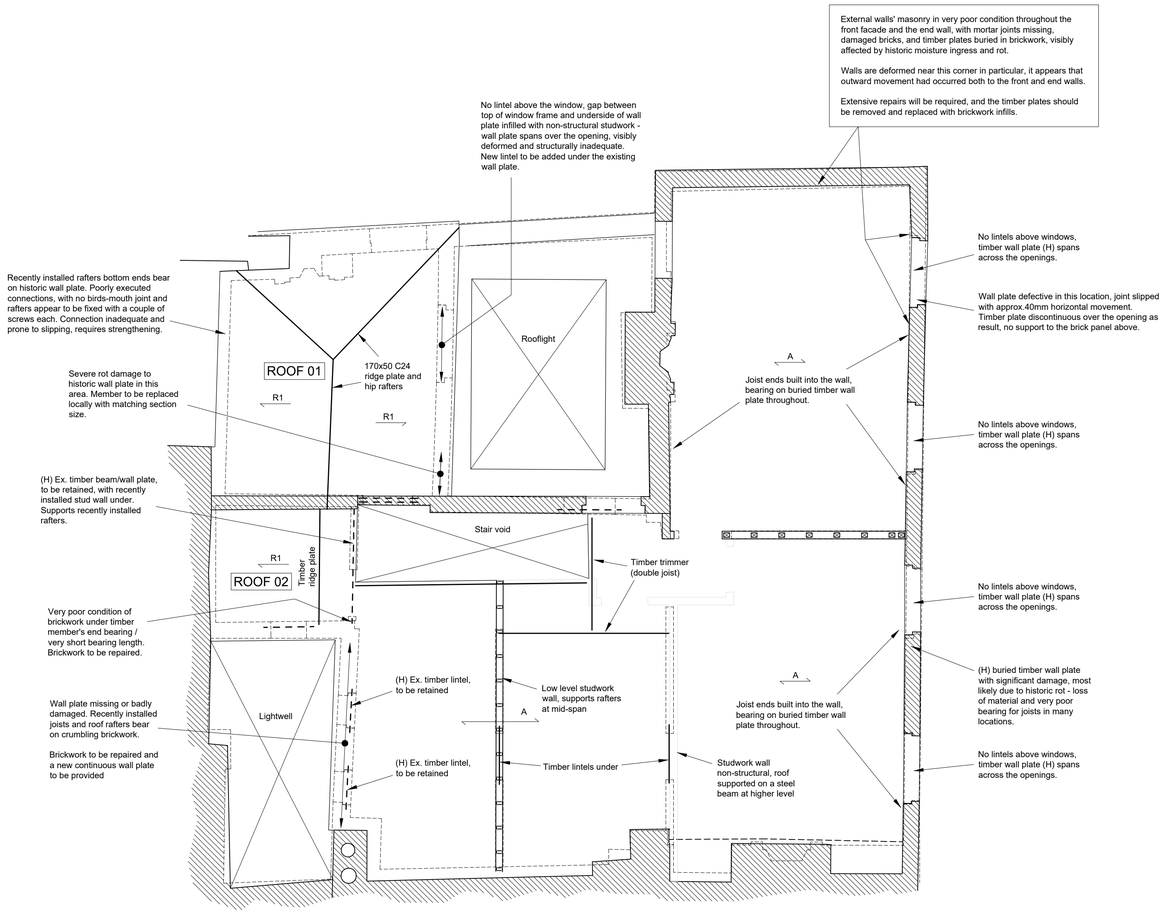

2nd Floor Plan

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c
- R1 — 95x70 C24 rafters at 400mm c/c
- R2 — 70w C24 rafters at 400mm c/c

Older existing joists:

- D — (H) 150x50 joists at 400mm c/c - relatively modern. Joists inadequate for the proposed roof terrace loads, to be removed.

Walls:

- Existing masonry
- Structure demolished during recent works
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Recently installed load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx
- Recently installed load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx

Other:

- Existing foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Historic beams, trimmers, or lintels, retained during recent works - material/function and details as noted on plans
- Beams, trimmers, or lintels installed during recent works - material/function and details as noted on plans

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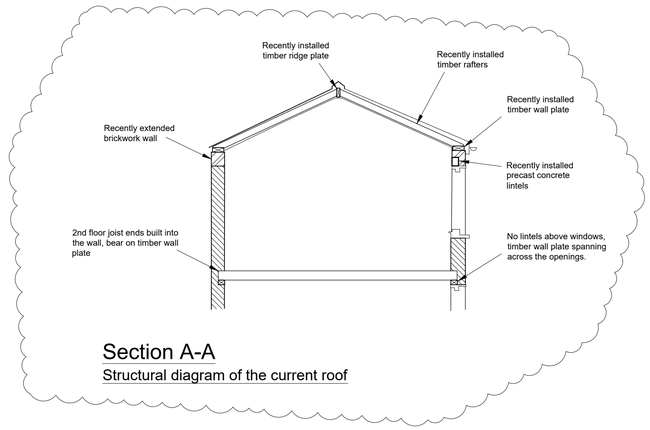
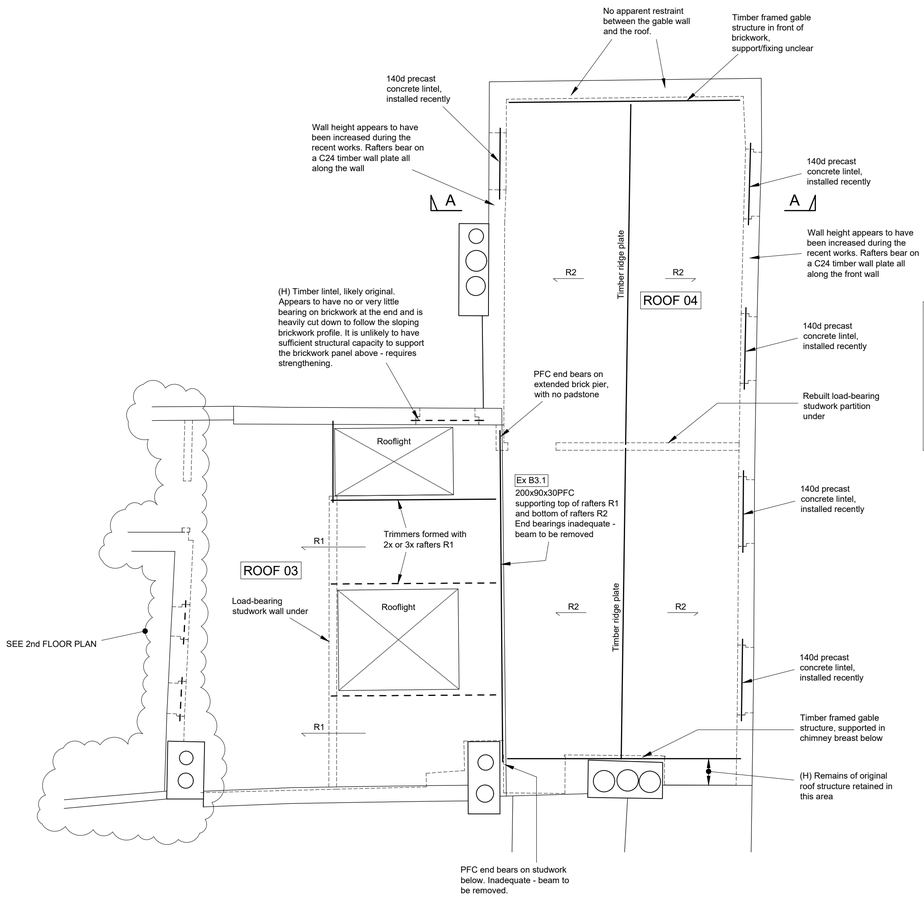
Project
9 The Mount
London NW3 6SZ

Title
Layout and condition of structure as seen in November 2024:
2nd Floor Plan

Drawing No.	Rev.
24-034/14	A



Section A-A
Structural diagram of the current roof



Roof Plan

We understand that the whole of the recently installed roof (formed with rafters R2) is to be dismantled since it does not follow the original ridge line. The raised brickwork it is bearing on is to also be taken down to the original level, and a new roof is to be constructed, to match the original profile and structural diagram.

The recently constructed roof (rafters R2) has no ties between the rafters - it applies horizontal 'spreading' forces onto the brick walls. It is structurally inadequate and would need to be replaced or strengthened regardless of the above.

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- R1 — 95x70 C24 rafters at 400mm c/c
- R2 — 70w C24 rafters at 400mm c/c

Older existing joists:

- D — (H) 150x50 joists at 400mm c/c - relatively modern. Joists inadequate for the proposed roof terrace loads, to be removed.

Walls:

- Existing masonry
- Structure demolished during recent works
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Recently installed load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx
- Recently installed load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx

Other:

- Existing foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Historic beams, trimmers, or lintels, retained during recent works - material/function and details as noted on plans
- Beams, trimmers, or lintels installed during recent works - material/function and details as noted on plans

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Project
9 The Mount
London NW3 6SZ

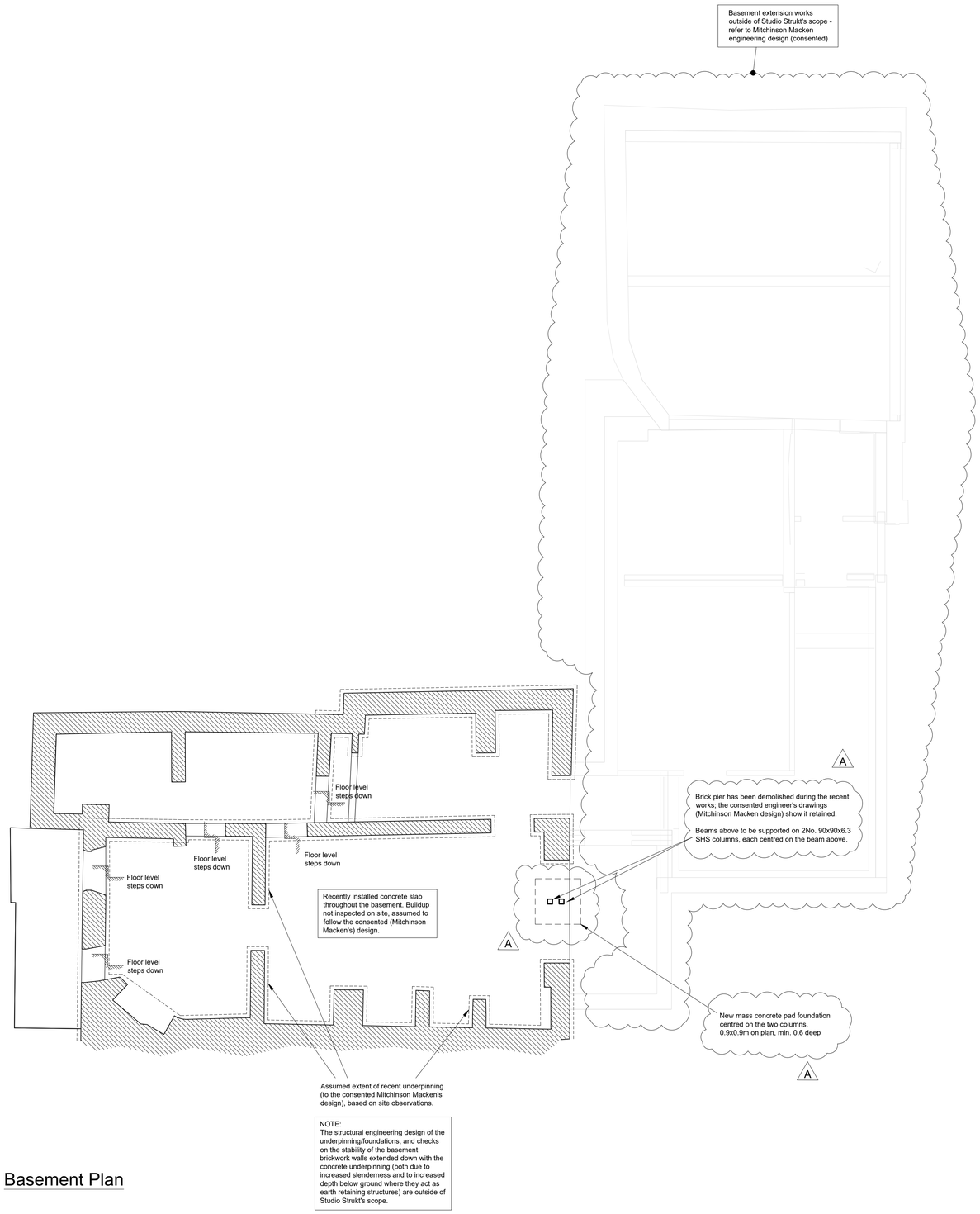
Title
Layout and condition of structure as seen in November 2024:
Roof Plan

Drawing No.	Rev.
24-034/15	A

Appendix C

Drawings 21-25

Proposed structural works



NOTE:
The structural engineering design of the underpinning/foundations, and checks on the stability of the basement brickwork walls extended down with the concrete underpinning (both due to increased slenderness and to increased depth below ground where they act as earth retaining structures) are outside of Studio Strukt's scope.

Basement Plan

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c

Walls:

- New brickwork - all brickwork infills to be fully toothed and bonded with existing brickwork
- Existing masonry
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Existing (recently installed) load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx; to be retained
- Existing (recently installed) load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx; to be retained
- New load-bearing timber studwork wall, comprising 50x100 C24 studs at 400mm c/c max, and 100x50 bottom and top plates. Double studs to be used at all wall corners and ends. Solid timber noggins to be installed between all studs, at 900mm vertical c/c max.

Other / general:

- Existing foundation under / structure under
- New foundation under / structure under
- Existing mass concrete or precast padstone (installed during recent works)
- Existing beams, trimmers, or lintels, to be retained retained - material/function and details as noted on plans. For further details (including whether the members are historic or installed recently) refer to drawings series 11-15
- Proposed beams, trimmers, or lintels
- Structure to be demolished

GENERAL NOTES:

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Project
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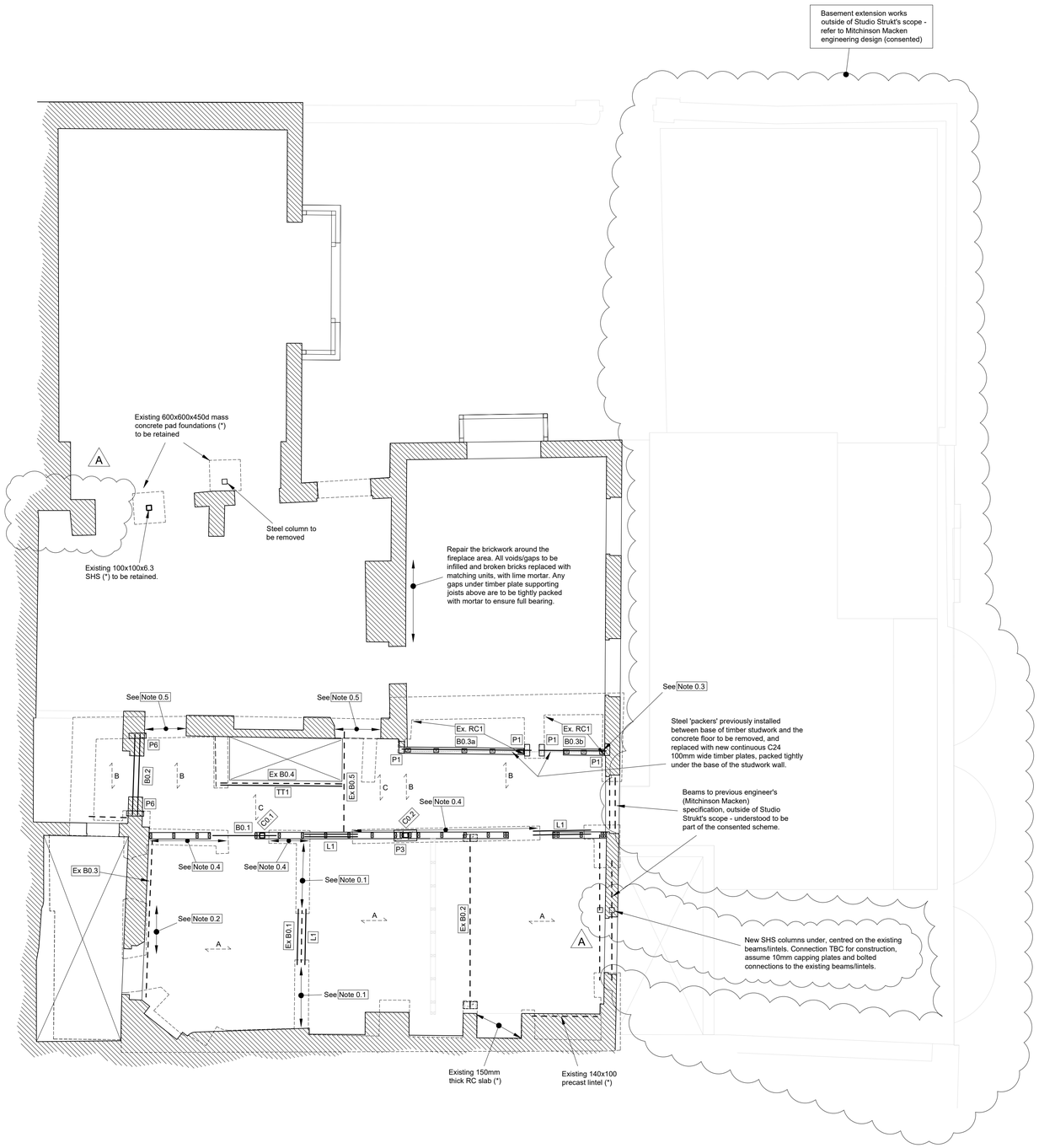
Title
Proposed structural works:
Basement Plan

Drawing No.	Rev.
24-034/21	A



Ground Floor Plan

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

A — Existing 175x75 C24 joists at 400-430mm c/c

B — Existing 150x75 C24 joists at 400-430mm c/c

C — Existing 100x75 C24 joists at 400mm c/c

Proposed timber structures:

TT1 — Existing trimmer (single joist) to be strengthened: Add another joist of the same section size on the side of the existing, fix together with:
- M8 bolts at 400mm c/c for joists less than 125mm deep
- M12 bolts at 400mm c/c for joists deeper than 125mm

The added joist to be of the same length as existing, to share the bearing/end fixing. Where existing joist is supported on a joist hanger, a new (double-width) hanger will be required.

Walls:

New brickwork - all brickwork infills to be fully toothed and bonded with existing brickwork

Existing masonry

Existing non-load-bearing walls (historic or recently installed, as noted)

Non-load-bearing timber studwork walls installed during recent works

Existing (recently installed) load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx; to be retained

Existing (recently installed) load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx; to be retained

New load-bearing timber studwork wall, comprising 50x100 C24 studs at 400mm c/c max, and 100x50 bottom and top plates. Double studs to be used at all wall corners and ends. Solid timber noggins to be installed between all studs, at 900mm vertical c/c max.

Existing structures:

Ex B0.1 — 75d x 175w wall plate spanning across opening

Ex B0.2 — 152x152x23UC

Ex B0.3 — 175x75 joist

Ex B0.4 — 100x75 joist acting as a trimmer

Ex B0.5 — 2No. 100x75 joists acting as a trimmer. Joists to be bolted together with M8 bolts at 400mm c/c max along the member, at mid depth.

Ex. RC1 — 150mm thick RC slabs (*) spanning between steel angles fixed to brick piers below

Lintels:

L1 — 100d x 100w precast lintels (Naylor S4 or similar) side by side - number to suit wall thickness, 2No. min.

Steelwork:

B0.1 — 152x152x37 UC

B0.2 — Pair of 152x89x16 UBs side by side, to support existing masonry above

B0.3a / B0.3b — 152x89x16 UB, installed under the existing concrete slab, in line with the studwork wall above

NOTE:
Unless noted otherwise, all beams to be installed within the depth of the timber floor joists, with top of steel 10mm below top of joists.

C0.1 — 90x90x6.3 SHS to be centred on and bear on new steel beam below, with a 10mm thick baseplate and 4No. M12 bolts

C0.2 — 90x90x6.3 SHS to be centred on and bear on new concrete padstone below, with a 10mm thick baseplate and 4No. M8 resin anchors into the concrete

NOTE:
Both steel columns to be built into the new studwork wall - the studwork provides lateral restraint to the columns. TImber studs are to be placed directly against the columns on both sides, and fixed through with M8 bolts at 600mm vertical c/c.

Padstones:

All padstones to be cast in-situ or precast units of the stated dimensions (all in mm).
L = length along the wall
W = width - penetration into wall
H = height (down the wall from underside of steel member)

Existing padstones, to be retained

P1 — 225L x 100W x 150H

P2 — 500L x 100W x 300H

P3 — 440L x 215W x 300H

P4 — 650L x 100W x 300H

P5 — 650L x 100W x 450H

P6 — 330L x 100W x 225H

Other / general:

Existing foundation under / structure under

Existing beams, trimmers, or lintels, to be retained retained - material/function and details as noted on plans. For further details (including whether the members are historic or installed recently) refer to drawings series 11-15

Proposed beams, trimmers, or lintels

Structure to be demolished

Repair/strengtheing specification:

Note 0.1 — Secure previously installed timber wall plate to brickwork and fix joists:

1. Ensure any gaps between top of brickwork and underside of timber plate are tightly packed with mortar.
2. Fix the wall plate to the top of brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c along the wall. Anchors to be positioned as close to the centreline of the wall as possible and penetrate min. 150mm into masonry.
3. Also provide vertical steel restraint straps at 900mm max c/c, extending min. 750mm down the wall and bent over the top of the wall plate. Fix to wall using plug-and screw fixings and to timber using wood screws.
4. Secure joists to wall plate using proprietary steel angle brackets or truss clips (Expamet or similar) and install full depth timber blocking between joist ends, along their bearing on the wall plate.

Note 0.2 — Provide additional support to Ex.B0.3:

1. Install minimum 6No. M12 Hilti HAS-U rods and HIT-HY-170 injection mortar, through the side of the joist and into brickwork behind, min. 100mm penetration into brickwork.
   Anchors to be spread evenly across the width of masonry pier (as indicated by the arrow on plan), and positioned as follows:
   - min. 150mm away from any masonry edge
   - min. 50mm away from any edge of timber
   - spaced min. 75mm apart
   - in a staggered pattern

Note 0.3 — Provide fixings between studwork walls and external masonry walls (the purpose is to ensure the two walls provide lateral restraint to each other):

1. Ensure the last stud is placed directly against the inside face of brickwork.
2. Fix the stud to the brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max vertical c/c. Anchors to be centred on the stud and penetrate 80-120mm into masonry.

Note 0.4 — Remove recently installed joist bearing on/spanning just above the top of brickwork wall, and remove the ground floor studwork partition above. Construct new load bearing studwork wall along the hallway:

1. Ensure top of masonry wall is a level, flat surface. Replace any broken or missing bricks, and apply a layer of grout over the whole top surface of the wall.
2. Fix new wall plate to the top of brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c along the wall. Anchors to be positioned as close to the centreline of the wall as possible and penetrate min. 150mm into masonry.
3. Also provide vertical steel restraint straps at 900mm max c/c, extending min. 750mm down the wall and bent over the top of the wall plate. Fix to wall using plug-and screw fixings and to timber using wood screws.
4. Secure joists to wall plate using proprietary steel angle brackets or truss clips (Expamet or similar) and install full depth timber blocking between joist ends, along their bearing on the wall plate.
5. Construct new studwork wall above.

Note 0.5 — Install new wall plate and secure joist ends where they currently bear directly on brickwork:

1. Remove a single course of bricks under the joists if necesssary to fit a new wall plate in.
2. Ensure top of masonry wall is a level, flat surface. Replce any broken or missing bricks, and apply a layer of grout over the whole top surface of the wall.
3. Fix new wall plate to the top of brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c along the wall. Anchors to be positioned min. 75mm away from edge of masonry and penetrate min. 150mm into masonry.
4. Also provide vertical steel restraint straps at 900mm max c/c, extending min. 750mm down the wall and bent over the top of the wall plate. Fix to wall using plug-and screw fixings and to timber using wood screws.
5. Secure joists to wall plate using proprietary steel angle brackets or truss clips (Expamet or similar) and install full depth timber blocking between joist ends, along their bearing on the wall plate.

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Project
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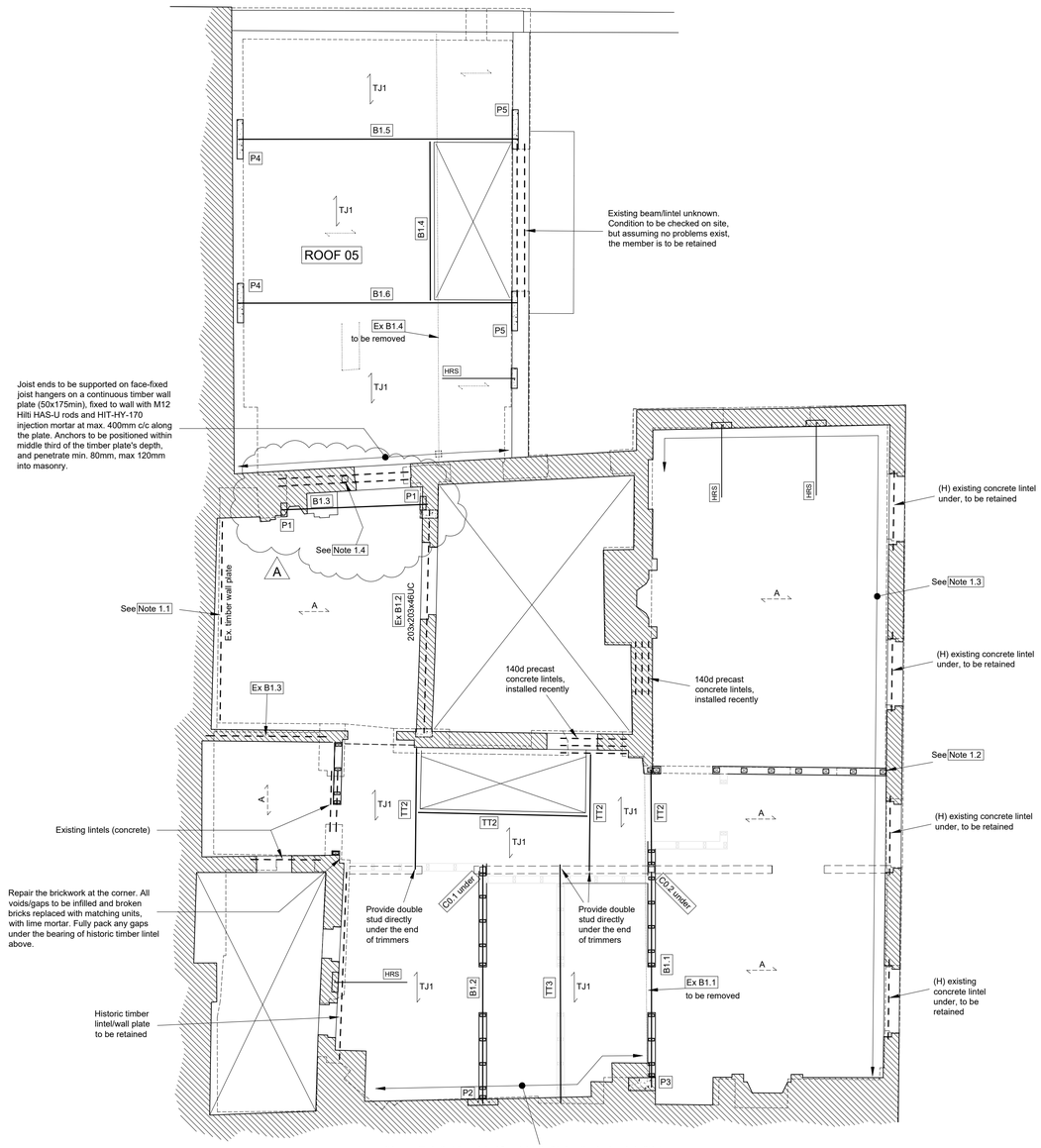
Title
Proposed structural works:
Ground Floor Plan

Drawing No.	Rev.
24-034/22	A



1st Floor Plan

It is very likely that the original floor joists in this location had ends built into pockets in the brickwork wall (a detail present in other areas of the house). It is also possible these pockets have no tbeen infilled and are still present - to be confirmed when the existing floor joists are removed. If this is the case, the new joists should be built into the pockets to replicate the original detail. Otherwise, joist ends are to eb supported on face-fixed joist hangers on a continuous timber wall plate (50x175min), fixed to wall with M12 Hilti HAS-U rods and HIT-HY-170 injection mortar at max. 400mm c/c along the plate. Anchors to be positioned within middle third of the timber plate's depth, and penetrate min. 80mm, max 120mm into masonry.

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c

Proposed timber structures:

- TT1 — Existing trimmer (single joist) to be strengthened: Add another joist of the same section size on the side of the existing, fix together with:
  - M8 bolts at 400mm c/c for joists less than 125mm deep
  - M12 bolts at 400mm c/c for joists deeper than 125mm

  The added joist to be of the same length as existing, to share the bearing/end fixing. Where existing joist is supported on a joist hanger, a new (double-width) hanger will be required.
- TT2 — 2No. 175x63 C24 joists bolted together with M12 bolts at 400mm c/c max.
- TT3 — 3No. 175x75 C24 joists bolted together with M12 bolts at 400mm c/c max.
- TJ1 — 175x63 C24 joists (min. size) at 400mm c/c
- TJ2 — 150x50 C24 joists (min. size) at 400mm c/c

Walls:

- New brickwork - all brickwork infills to be fully toothed and bonded with existing brickwork
- Existing masonry
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Existing (recently installed) load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx; to be retained
- Existing (recently installed) load-bearing timber studwork wall, comprising 42x85 C24 studs at 400mm c/c approx; to be retained
- New load-bearing timber studwork wall, comprising 50x100 C24 studs at 400mm c/c max, and 100x50 bottom and top plates. Double studs to be used at all wall corners and ends. Solid timber noggins to be installed between all studs, at 900mm vertical c/c max.

Existing structures:

- Ex B1.1 — to be removed
- Ex B1.2 — 203x203x46UC
- Ex B1.3 — (H) Existing steel beam - 150 deep approx
- Ex B1.4 — to be removed

Lintels:

- L1 — 100d x 100w precast lintels (Naylor S4 or similar) side by side - number to suit wall thickness, 2No. min.

Steelwork:

- B1.1 — 152x152x37UC
- B1.2 — 152x152x37UC
- B1.3 — 152x152x23UC
- B1.4 — 152x152x23UC
- B1.5 — 152x152x37UC
- B1.6 — 152x152x37UC

Padstones:

All padstones to be cast in-situ or precast units of the stated dimensions (all in mm).
L = length along the wall
W = width - penetration into wall
H = height (down the wall from underside of steel member)

- Existing padstones, to be retained
- P1 — 225L x 100W x 150H
- P2 — 500L x 100W x 300H
- P3 — 440L x 215W x 300H
- P4 — 650L x 100W x 300H
- P5 — 650L x 100W x 450H
- P6 — 330L x 100W x 225H

Other / general:

- Existing foundation under / structure under
- Existing beams, trimmers, or lintels, to be retained retained - material/function and details as noted on plans. For further details (including whether the members are historic or installed recently) refer to drawings series 11-15
- Proposed beams, trimmers, or lintels
- Structure to be demolished
- HRS — Restraint strap to tie external wall to floors where joists run parallel to wall.

  1.2m long 'heavy duty' proprietary galvanised steel restraint strap (4mm thick, 28mm wide) fixed across 3No. joists with noggins in between. Can be fixed to top or the underside of joists, and joists can be noteched locally).

  End of strap to be bent and cast into a type P6 padstone, cast in-situ into a pocket cut on the inside of the wall.

Repair/strengtheing specification:

Note 1.1 Strengthen connection between wall plate and brickwork behind, remediate poorly installed joist hangers :

1. Install additional resin anchors between the existing, to ensure max 400mm spacing between anchors along the wall plate: M12 Hilti HAS-U rods and HIT-HY-170 injection mortar. Anchors to be positioned within middle third of the timber plate's depth, and penetrate min. 80mm, max 120mm into masonry.
2. Replace all existing joist hangers along the wall plate with face-fixed hangers (Expamet Maxi-speedy or similar).

Note 1.2 Provide fixings between studwork walls and external masonry walls (the purpose is to ensure the two walls provide lateral restraint to each other):

1. Ensure the last stud is placed directly against the inside face of brickwork.
2. Fix the stud to the brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max vertical c/c. Anchors to be centred on the stud and penetrate 80-120mm into masonry.

Note 1.3 Timber plates buried in external walls are in poor condition due to historic or continued water ingress, affecting integrity of the walls, and providing inadequate bearing for joists.

Remove all timber plates embedded in external walls and infill the gaps with brickwork:

1. Existing timber plates (supporting the joist ends and higher within the walls, whether historic or installed recently), are to be carefully cut out, in segments no longer than 750mm at a time. Joists bearing on the segment being worked on to be temporarily supported.
2. Infill the void with bricks to match existing, with lime mortar joints - mortar to be packed in tightly to ensure good bond with existing masonry

Note 1.4 Recently installed SHS post head connection does not provide sufficient bearing for the supported historic steel beams. Beams significantly overhang the SHS profile and capping plate.

1. Site weld vertical stiffeners (ribs) between the sides of the SHS and underside of supported beams. Assume 150mm high plates, extending to the outer edges of both existing beams.
2. NOTE: Full details will be provided by Studio Strukt for construction.

GENERAL NOTES:

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2. Do not scale from any Studio Strukt drawings. Use stated dimensions only. All dimensions to be verified on site by contractor.
3. Fire protection, thermal and sound insulation, and waterproofing are outside of Studio Strukt's scope. Any such elements are shown indicatively only.
4. The Contractor is responsible for ensuring the stability of all structures within and adjacent to the site at all times during the contract, and is to design and provide all temporary works required.
5. All work subject to Building Control approval, Party Wall agreement, and Listed Building consent. Formation levels of all foundations to be approved on site by Building Control inspector.
6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

Unless noted otherwise, all existing steelwork, concrete and timber structures shown on this drawing are non-historic elements installed during the recent construction works.

All historic timber, steel, and concrete members are marked with (H).

Unless noted otherwise, all masonry structures are assumed to be historic.

All existing member sizes marked with (*) are based on previous engineer's drawings and have not been verified on site. All other existing member sizes are based on on own site measurements.

Rev	Description	Date	By
A	Revised as clouded, issued for submission to the Council	03/12/24	BK
-	Issued for comments/coordination	28/11/24	BK

studio strukt

studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

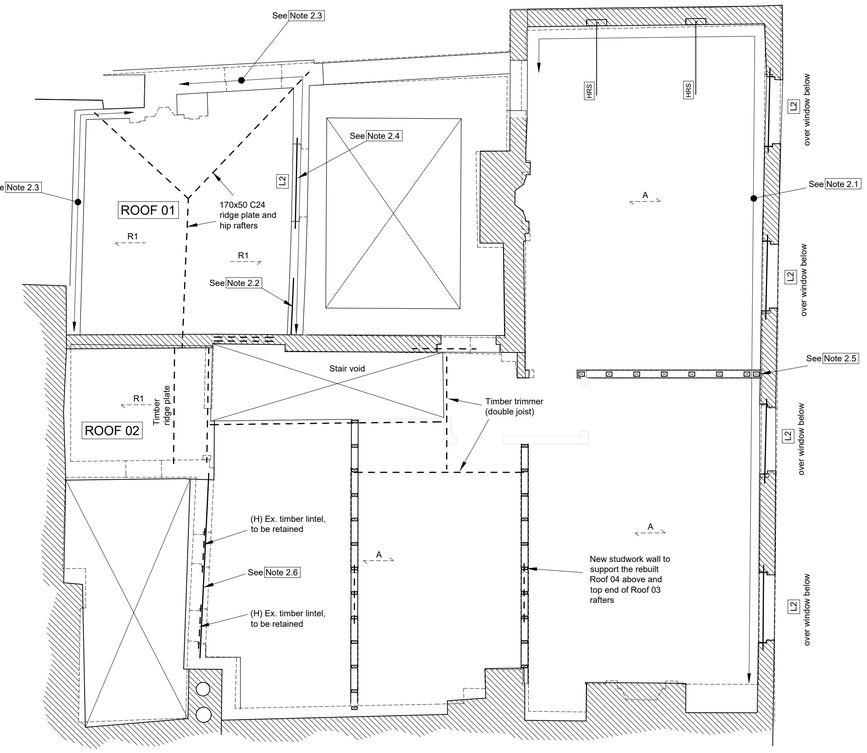
PRELIMINARY
Not for construction

Scale	Date	By	Checked
1:50 @ A1	15/11/2024	BK	

Project
9 The Mount
London NW3 6SZ

Title
Proposed structural works:
1st Floor Plan

Drawing No.	Rev.
24-034/23	A



2nd Floor Plan

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c
- R1 — 95x70 C24 rafters at 400mm c/c
- R2 — 70w C24 rafters at 400mm c/c

Walls:

- New brickwork - all brickwork infills to be fully toothed and bonded with existing brickwork
- Existing masonry
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Existing (recently installed) load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx; to be retained
- Existing (recently installed) load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx; to be retained
- New load-bearing timber studwork wall, comprising 50x100 C24 studs at 400mm c/c max, and 100x50 bottom and top plates. Double studs to be used at all wall corners and ends. Solid timber noggins to be installed between all studs, at 900mm vertical c/c max.

Padstones:

All padstones to be cast in-situ or precast units of the stated dimensions (all in mm).
L = length along the wall
W = width - penetration into wall
H = height (down the wall from underside of steel member)

- Existing padstones, to be retained
- P1 — 225L x 100W x 150H
- P2 — 500L x 100W x 300H
- P3 — 440L x 215W x 300H
- P4 — 650L x 100W x 300H
- P5 — 650L x 100W x 450H
- P6 — 330L x 100W x 225H

Lintels:

- L1 — 100d x 100w precast lintels (Naylor S4 or similar) side by side - number to suit wall thickness, 2No. min.
- L2 — 100d x 100w precast lintel (Naylor S4 or similar) within the inner half of the existing wall's thickness, to replace existing timber lintel/wall plate. Existing brick arch to be retained on the outer part of the wall.
  NOTE: condition of the existing arch to be inspected on site - since significant movement has historically occurred in the external walls, the arches may be dislocated and damaged and require repairs.

Other / general:

- Existing foundation under / structure under
- Existing beams, trimmers, or lintels, to be retained retained - material/function and details as noted on plans. For further details (including whether the members are historic or installed recently) refer to drawings series 11-15
- Proposed beams, trimmers, or lintels
- Structure to be demolished
- HRS — Restraint strap to tie external wall to floors where joists run parallel to wall.

  1.2m long 'heavy duty' proprietary galvanised steel restraint strap (4mm thick, 28mm wide) fixed across 3No. joists with noggins in between. Can be fixed to top or the underside of joists, and joists can be noteched locally).

  End of strap to be bent and cast into a type P6 padstone, cast in-situ into a pocket cut on the inside of the wall.

Repair/strengtheing specification:

Note 2.1 Timber plates buried in external walls are in poor condition due to historic or continued water ingress, affecting integrity of the walls, and providing inadequate bearing for joists.

Remove all timber plates embedded in external walls and infill the gaps with brickwork:

1. Existing timber plates (supporting the joist ends and higher within the walls, whether historic or installed recently), are to be carefully cut out, in segments no longer than 750mm at a time. Joists bearing on the segment being worked on to be temporarily supported.
2. Infill the void with bricks to match existing, with lime mortar joints - mortar to be packed in tightly to ensure good bond with existing masonry

Note 2.2 Approx. 750mm of existing timber wall plate to be replaced with new C24 timber wall plate of matching dimensions.

1. Fix new wall plate to the top of brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c. Anchors to be positioned as close to the centreline of the wall as possible and penetrate min. 150mm into masonry.
2. Also provide 2No. vertical steel restraint straps, placed max 150mm from ends of the new segment, extending min. 750mm down the wall and bent over the top of the wall plate. Fix to wall using plug-and screw fixings and to timber using wood screws. This is similar to the existing wall plate fixings.
3. Connect the new segment with existing wall plate with nail plates

Note 2.3 Strengthening to connections between recently installed roof rafters and historic wall plate:

1. Install proprietary steel brackets or truss clips (Expamet or similar) between each rafter and the wall plate (the existing connection is inadequate with no birds-mouth and the rafters fixed with only a couple of screws each through the top of rafter).
2. Ensure that each of the existing steel restraint straps has positive fixings into the existing wall plate. Add nails or wood screws where missing.

Note 2.4 New lintel L2 to be installed directly above the existing window head, and gap between top of lintel and underside of existing timber wall plate to be infilled with brickwork (to match existing), replacing the current studwork infill.

Note 2.5 Provide fixings between studwork walls and external masonry walls (the purpose is to ensure the two walls provide lateral restraint to each other):

1. Ensure the last stud is placed directly against the inside face of brickwork.
2. Fix the stud to the brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max vertical c/c. Anchors to be centred on the stud and penetrate 80-120mm into masonry.

Note 2.6 Install new wall plate and secure joist ends where they currently bear on very poor condition brickwork or loose and badly damaged remains of historic wall plate:

1. Remove a single course of bricks under the joists if necesssary to fit a new wall plate in.
2. Ensure top of masonry wall is a level, flat surface. Replace any broken or missing bricks, and apply a layer of grout over the whole top surface of the wall.
3. Fix new wall plate to the top of brick wall with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c along the wall. Anchors to be positioned min. 75mm away from edge of masonry and penetrate min. 150mm into masonry. Where the wall plate bears directly on top of existing lintels, fix with wood screws through the top surface.
4. Also provide vertical steel restraint straps at 900mm max c/c, extending min. 750mm down the wall and bent over the top of the wall plate. Fix to wall using plug-and screw fixings and to timber using wood screws.
5. Secure joists to wall plate using proprietary steel angle brackets or truss clips (Expamet or similar) and install full depth timber blocking between joist ends, along their bearing on the wall plate.

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4. The Contractor is responsible for ensuring the stability of all structures within and adjacent to the site at all times during the contract, and is to design and provide all temporary works required.
5. All work subject to Building Control approval, Party Wall agreement, and Listed Building consent. Formation levels of all foundations to be approved on site by Building Control inspector.
6. All Studio Strukt plans are drawn 'looking down' and show structure within and immediately below the floor/level the plan refers to. For example, a 1st floor plan shows 1st floor joists, beams within and under 1st floor, and lintels above openings at ground floor level.

Unless noted otherwise, all existing steelwork, concrete and timber structures shown on this drawing are non-historic elements installed during the recent construction works.

All historic timber, steel, and concrete members are marked with (H).

Unless noted otherwise, all masonry structures are assumed to be historic.

All existing member sizes marked with (*) are based on previous engineer's drawings and have not been verified on site. All other existing member sizes are based on on own site measurements.

Rev	Description	Date	By
A	Revised as clouded, issued for submission to the Council	03/12/24	BK
-	Issued for comments/coordination	28/11/24	BK

studio strukt
studiostrukt.co.uk
078 508 75 271
bart@studiostrukt.co.uk

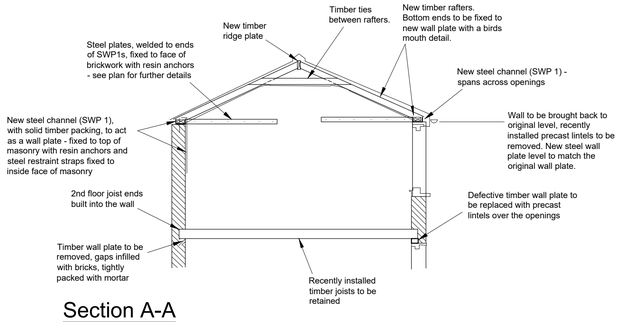
PRELIMINARY
Not for construction

Scale	Date	By	Checked
1:50 @ A1	15/11/2024	BK	

Project
9 The Mount
London NW3 6SZ

Title
Proposed structural works:
2nd Floor Plan

Drawing No.	Rev.
24-034/24	A

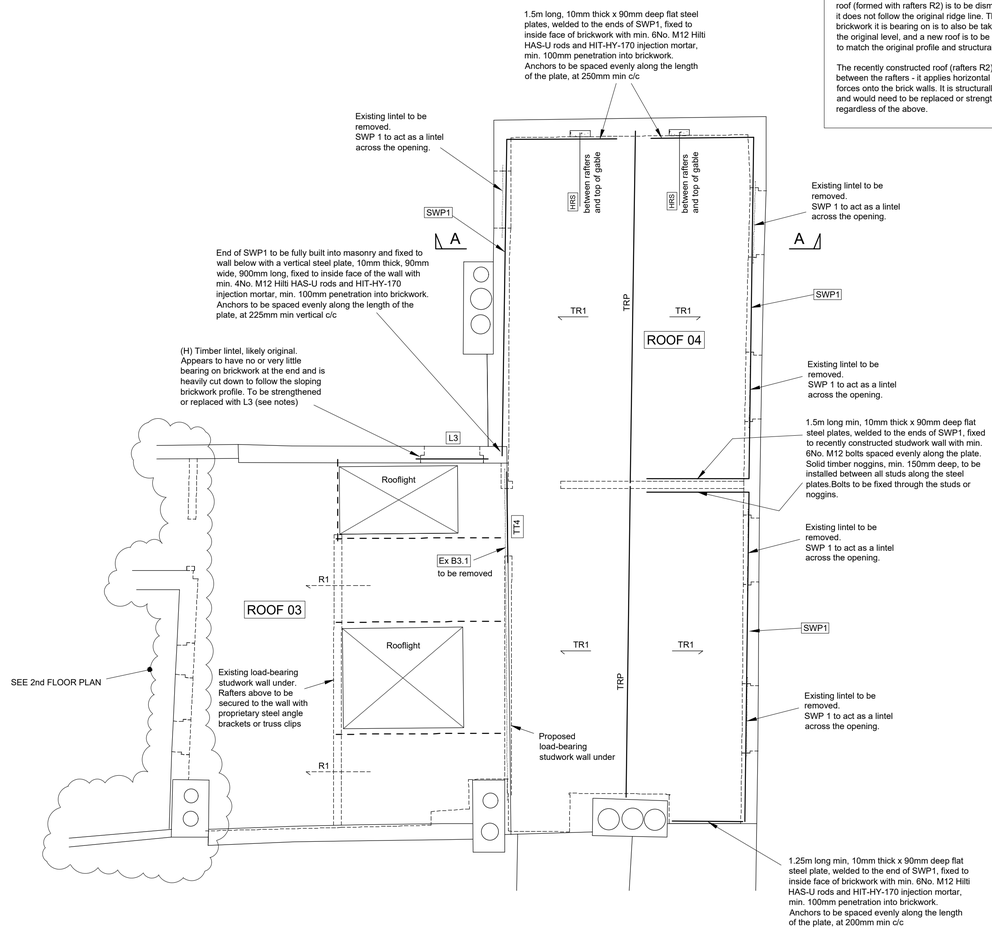


Section A-A

Structural diagram of the proposed roof

We understand that the whole of the recently installed roof (formed with rafters R2) is to be dismantled since it does not follow the original ridge line. The raised brickwork it is bearing on is to also be taken down to the original level, and a new roof is to be constructed, to match the original profile and structural diagram.

The recently constructed roof (rafters R2) has no ties between the rafters - it applies horizontal 'spreading' forces onto the brick walls. It is structurally inadequate and would need to be replaced or strengthened regardless of the above.



Roof Plan

Drawing key:

Timber:

All existing joist and rafter types listed below are modern, installed during recent works:

- A — Existing 175x75 C24 joists at 400-430mm c/c
- B — Existing 150x75 C24 joists at 400-430mm c/c
- C — Existing 100x75 C24 joists at 400mm c/c
- R1 — 95x70 C24 rafters at 400mm c/c
- R2 — 70w C24 rafters at 400mm c/c
- TRP — 150x50 C24 ridge plate
- TR1 — 125x50 C24 rafters at 400mm c/c
- TT4 — 2No. 150x50 C24 joists bolted together with M12 bolts at 400mm c/c max.

Steel:

- SWP1 — 150x90x24 PFC (galvanised) laid 'on its back', acting as a wall plate to support roof rafters, preventing spread of the timber roof A-frames, and tying the poor condition brickwork together. PFC fixed to top of masonry wall with with M8 Hilti HAS-U rods and HIT-HY-170 injection mortar, at 600mm max c/c. Anchors to be positioned as close to the centreline of the wall as possible and penetrate min. 150mm into masonry. PFC must be a single, continuous element over the whole length of each room, between the end restraints as noted on plan.

B

Walls:

- New brickwork - all brickwork infills to be fully toothed and bonded with existing brickwork
- Existing masonry
- Existing non-load-bearing walls (historic or recently installed, as noted)
- Non-load-bearing timber studwork walls installed during recent works
- Existing (recently installed) load-bearing timber studwork wall, comprising 95x70 C24 studs at 450mm c/c approx; to be retained
- Existing (recently installed) load-bearing timber studwork wall, comprising 42x95 C24 studs at 400mm c/c approx; to be retained
- New load-bearing timber studwork wall, comprising 50x100 C24 studs at 400mm c/c max, and 100x50 bottom and top plates. Double studs to be used at all wall corners and ends. Solid timber noggins to be installed between all studs, at 900mm vertical c/c max.

Padstones:

All padstones to be cast in-situ or precast units of the stated dimensions (all in mm).
L = length along the wall
W = width - penetration into wall
H = height (down the wall from underside of steel member)

- Existing padstones, to be retained
- P1 — 225L x 100W x 150H
- P2 — 500L x 100W x 300H
- P3 — 440L x 215W x 300H
- P4 — 650L x 100W x 300H
- P5 — 650L x 100W x 450H
- P6 — 330L x 100W x 225H

Lintels:

- L3 — Pair of 100w x 65d x 8.0 galvanised steel angles (65mm leg pointing up) to be added under the existing timber lintel, and outer skin of masonry (assumed flat arch) with min. 150mm bearing on the brickwork at each end. Alternatively, the existing lintel is to be replaced with IG L9 lintel (58mm high), supporting the full thickness of the brickwork panel above.

Other / general:

- Existing foundation under / structure under
- Existing beams, trimmers, or lintels, to be retained retained - material/function and details as noted on plans. For further details (including whether the members are historic or installed recently) refer to drawings series 11-15
- Proposed beams, trimmers, or lintels
- Structure to be demolished
- HRS — Restraint strap to tie external wall to floors where joists run parallel to wall. 1.2m long 'heavy duty' proprietary galvanised steel restraint strap (4mm thick, 28mm wide) fixed across 3No. joists with noggins in between. Can be fixed to top or the underside of joists, and joists can be noteched locally). End of strap to be bent and cast into a type P6 padstone, cast in-situ into a pocket cut on the inside of the wall.

Repair/strengtheing specification:

Note 2.1 Timber plates buried in external walls are in poor condition due to historic or continued water ingress, affecting integrity of the walls, and providing inadequate bearing for joists.

Remove all timber plates embedded in external walls and infill the gaps with brickwork:

1. Existing timber plates (supporting the joist ends and higher within the walls, whether historic or installed recently), are to be carefully cut out, in segments no longer than 750mm at a time. Joists bearing on the segment being worked on to be temporarily supported.
2. Infill the void with bricks to match existing, with lime mortar joints - mortar to be packed in tightly to ensure good bond with existing masonry

GENERAL NOTES:

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Rev	Description	Date	By
B	SWP1 note added	09/12/24	BK
A	Revised as clouded, issued for submission to the Council	03/12/24	BK
-	Issued for comments/coordination	28/11/24	BK

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078 508 75 271
bart@studiostrukt.co.uk

PRELIMINARY
Not for construction

Scale	Date	By	Checked
1:50 @ A1	15/11/2024	BK	

Project
9 The Mount
London NW3 6SZ

Title
Proposed structural works:
Roof Plan

Drawing No.	Rev.
24-034/25	B