11 Chamberlain Street, NW1 8XD

Job Number: 8472

Date 01.07.22

Issue 1

Document register

Drawing	Document	Revision
100	Lower Ground Floor Plan	P1
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103	Second Floor Plan	P1
104	Third Floor Plan	P1
105	Roof plan	P1
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ROO

Risks

These have potential to cause design changes which could lead to increased cost and/or build-time.

1. Site unknowns: Changes in floor span direction, or structural elements that have not been identified by investigative works.
2. Depth of existing foundations unknown. Lower floor level assumed to require RC underpinning works to accommodate without undermining existing wall.
3. Location of drainage / access requirements for drainage unknown. Existing drainage run is public.
4. Presence of existing steelwork bearing onto load bearing structure to be demolished. Additional structure needed to allow removal of structure. Or scheme reconfiguration. Exploratory works needed to confirm
5. Trial hole needed to confirm depth and soil conditions

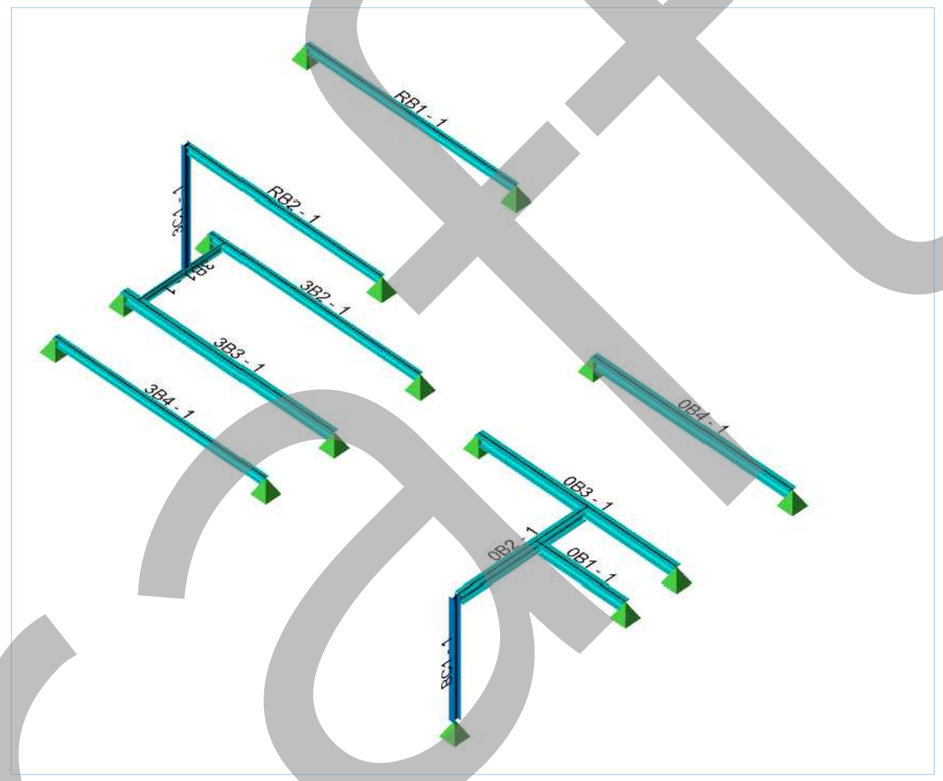
Options

Alternative structural solutions which Blue Engineering have no strong preference over.

1. Opt for UB Sections instead of UC Sections. Lighter sections lead to cost savings.

Opportunities

3D Model (Not to scale)



19 Trees needed for carbon absorption over 25 years
If you would like to plant these trees donate here.

Materials	Kg	CO2e	£
Steel	1901	3295	8458
Concrete	70560	8554	5232

Combined estimated CO2e for these materials is: 11,849

Estimated cost of materials is: £13,691

Find out why we are doing this and how we got our numbers here.

BLUE ENGINEERING

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CO^2e History

Rev	Date	CO^2e Total
1	01.07.22	11,849

1 Tree in a Year Absorbs = 25 kgCO2e

1 Tonne of Steel = 69 Trees Per Year 1576kgCO2e

1 Cubic Meter of Concrete = 14 Trees Per Year 332kgCO2e

All cutouts to be cleanly disc cut using non percussive hand tools. Beams and lintels to be tightly dry packed into position

Unhatched walls are non-load bearing and are to be constructed to Architect's specification

30x5mm mild steel restraint straps to be installed at 1200mm horizontal centres and 300mm vertical centres, and to be 1200mm long at all junctions between the floor plates and steelwork/masonry

U.N.O. All steelwork is to be grade S355, including plates and connections. Refer to Structural Specification

U.N.O. All bolts to be Grade 8.8

– – – – Indicates line of structure under

– - - - - – Indicates existing structure to be demolished

Indicates change in level

Proposed Steelwork Schedule	
Ref.	Serial Size
UC1	152 x 152 x 23 UC

All Pad foundations to be as dimensioned and formed with FND2 concrete mix or other approved by Building Control officer - depth of foundations to be minimum 1000mm below ground level on virgin ground and as agreed with Building Control

Foundation design is in abeyance and subject to results from trail holes recommended prior to works commencing to establish depth and form of existing foundations and to confirm ground conditions

Underpinning Specification

The underpinning has been designed so that the maximum bearing pressure is 150 KN/m2 (SLS) based on medium dense sand and gravel indicated on borehole logs local to the site. Should the ground conditions found to be different the structural engineer must be informed prior to the casting of the underpinning.

The Contractor is to be responsible for the accurate construction of the works according to the true intent of the Engineer's drawings and this specification.

The Contractor is to consider the need for any temporary works required to ensure the stability of the walls underpinned and provide any needling, dead shoring, propping etc. as may be appropriate.

The underpinning legs are to be constructed in the stages indicated on the drawing. Should the contractor wish to undertake the works in different stages this must be agreed with the engineer prior to undertaking the works

The excavation works are to be undertaken carefully so that the existing footings are not disturbed. Excavations are to be temporarily supported as necessary

When excavating for an underpinning leg, if any deviation is found in the nature of the bearing strata, or if obstacles or obstructions are encountered, the facts are to be reported to the Engineer.

All underpinning legs should have keys formed in them for bonding into succeeding legs as indicated on the Engineer's drawing.

A minimum of 48 hours after concreting a leg of underpinning, the footings above may be pinned up.

The pinning concrete is to be driven into place using hand held hammer and a 75 mm square hardwood drift against a substantial timber, secured on far side of footing.

Concreting and pinning-up must be completed before starting to excavate the next section of underpinning in the sequence.

Underpinning legs should preferably be concreted on the same day as they are excavated. If it is necessary to leave them open overnight temporary works and timbering are to be used to ensure that all is secure. On no account are underpinning legs to be left open over the weekend.

Particular care is to be taken to clean off and if necessary hack or scabble side of previously cast legs to provide adequate bond before concreting subsequent legs.

If water is encountered in excavation the Contractor is to provide sumps, grips and pumps as necessary to keep the excavations free from water always.

Materials

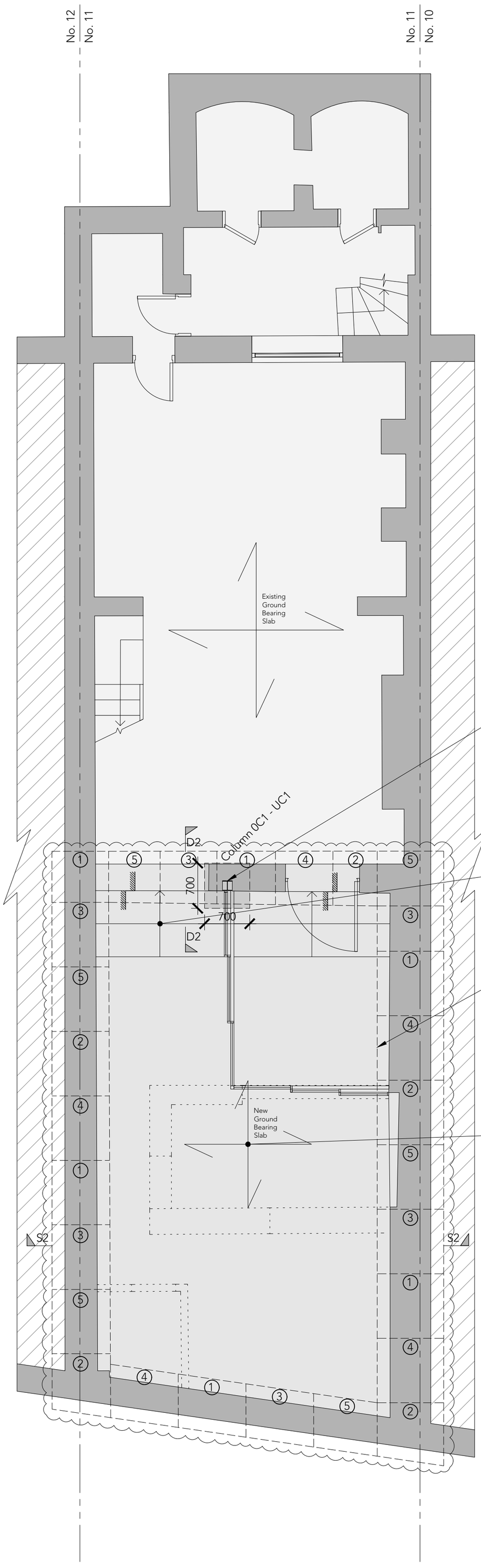
The concrete used in underpinning legs shall be minimum grade RC40 in accordance with BS EN 206:2013, with a minimum cement content of 330 kg/m³ or a 1:1.5:3 prescribed mix using 20 mm maximum aggregate, subject to proper ganging facilities being available on site.

Pinning concrete shall be approximately 75 mm thick pea-shingle concrete 1:1:5:3 mixing using 5 mm - 10 mm coarse aggregate and "Cebex 100" expanding admixture by Messrs Fosroc UK Ltd in accordance with their instructions.

The water content in the pinning concrete is to be the minimum necessary to ensure hydration of the cement and the consistency should be such that the wetted mix will just bind under strong hand pressure.

Numbers in bay refer to a "possible" excavation and underpinning sequence to be undertaken by the contractor - Refer to Structural Specification for more Details

① ③ ⑤ ② ④



Column to have 15mm thick steel base plate welded to the bottom via 6mm thick full face fillet weld and fixed to foundation via 4no. M16 resin anchors with Hilti HY-200 resin. Minimum embedment to be 300mm. Minimum 25mm thick dry pack between plate and foundation

New steps to be built off proposed slab

Existing wall and foundation to be underpinned in mass concrete. Underpin to match width of wall over and have 200mm deep toes. Underpins be cast in 1.0m widthsa and tied to adjoining pins using 2no. 600mm long H12 dowels at 200mm vertical centres

Floor to be lowered. New 300mm thick ground bearing slab formed from RC40 concrete mix with A393 mesh to the bottom face with 50mm cover and B785 mesh on the top face with 30mm cover. Slab to be cast on a 50mm thick blinding layer on a 150mm thick layer of crushed and compacted hardcore - **Detail to be confirm following trial hole report**

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Drawing History

Rev	Date	Description	Drawn	Checked
P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
Lower Ground Floor Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
100

Revision
P1

Scale
1:50 at A2

A2

All cutouts to be cleanly disc cut using non percussive hand tools. Beams and lintels to be tightly dry packed into position

Unhatched walls are non-load bearing and are to be constructed to Architect's specification

30x5mm mild steel restraint straps to be installed at 1200mm horizontal centres and 300mm vertical centres, and to be 1200mm long at all junctions between the floor plates and steelwork/masonry

Where steelwork is supporting existing masonry or blockwork, minimum 25mm gap to be tightly dry packed between top flange of beam and structure over. Temporary works only to be removed once dry pack has hardened

U.N.O. All steelwork is to be grade S355, including plates and connections. Refer to Structural Specification

U.N.O. Steelwork to steelwork connections to be via 10mm thick end plates with 6mm full face fillet weld fixed into web of opposing beam using 4no. M16 bolts

U.N.O. All bolts to be Grade 8.8

Beams over openings are designed with a total deflection limited to span/325. Live load deflection has been limited to span/500. Manufacturer to confirm if acceptable

Existing timbers to be inspected for general condition, rot and decay. Contact Blue Engineering if poor condition found

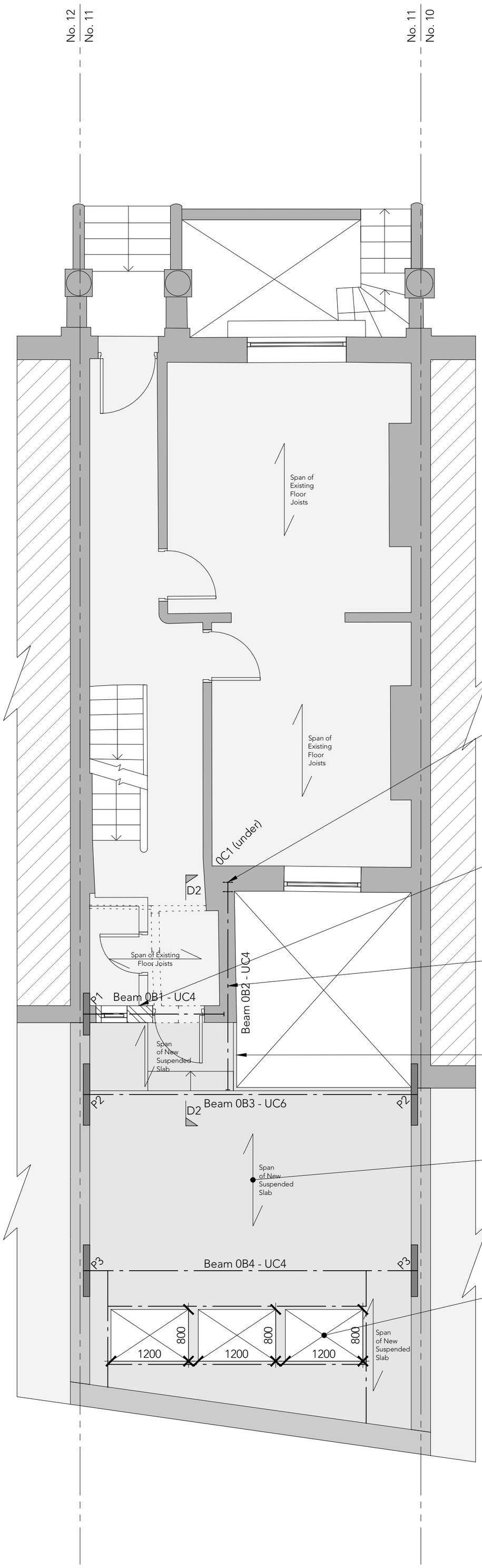
– – – – Indicates line of structure under

– - - - - – Indicates existing structure to be demolished

Proposed Steelwork Schedule	
Ref.	Serial Size
UC4	203 x 203 x 46 UC
UC6	203 x 203 x 60 UC

Padstone Schedule:
P1: 650x100x140mm Pre-Stressed Concrete Lintel
P2: 950mm long Naylor R12 High Spec Lintel
P3: 800mm long Naylor R12 High Spec Lintel

All padstones to be tightly dry packed into position



Beam 0B2 to bear onto Column 0C1 and to be connected via standard endplate connection - 10mm thick endplate to be welded to each beam via 6mm thick full face fillet weld and 4no. M16 bolts through plates and bottom flange of beam

Opening to be infilled with brickwork to match existing with class (iii) mortar. New brickwork to be toothed into existing

Beam may need to be cranked. Architect to provide section to determine levels

New balustrade design by others. Balustrade to be fixed to the walls. **Architect to confirm**

New 175mm thick RC suspended slab to be formed using RC40 concrete mix with A393 mesh mid-depth. Nominal cover to be 50mm to ends

Openings in slabs to be trimmed with 203x203x46 UC Beams

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Drawing History

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P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
Ground Floor Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
101

Revision
P1

Scale
1:50 at A2

A2

All cutouts to be cleanly disc cut using non percussive hand tools. Beams and lintels to be tightly dry packed into position

Unhatched walls are non-load bearing and are to be constructed to Architect's specification

Existing timbers to be inspected for general condition, rot and decay. Contact Blue Engineering if poor condition found

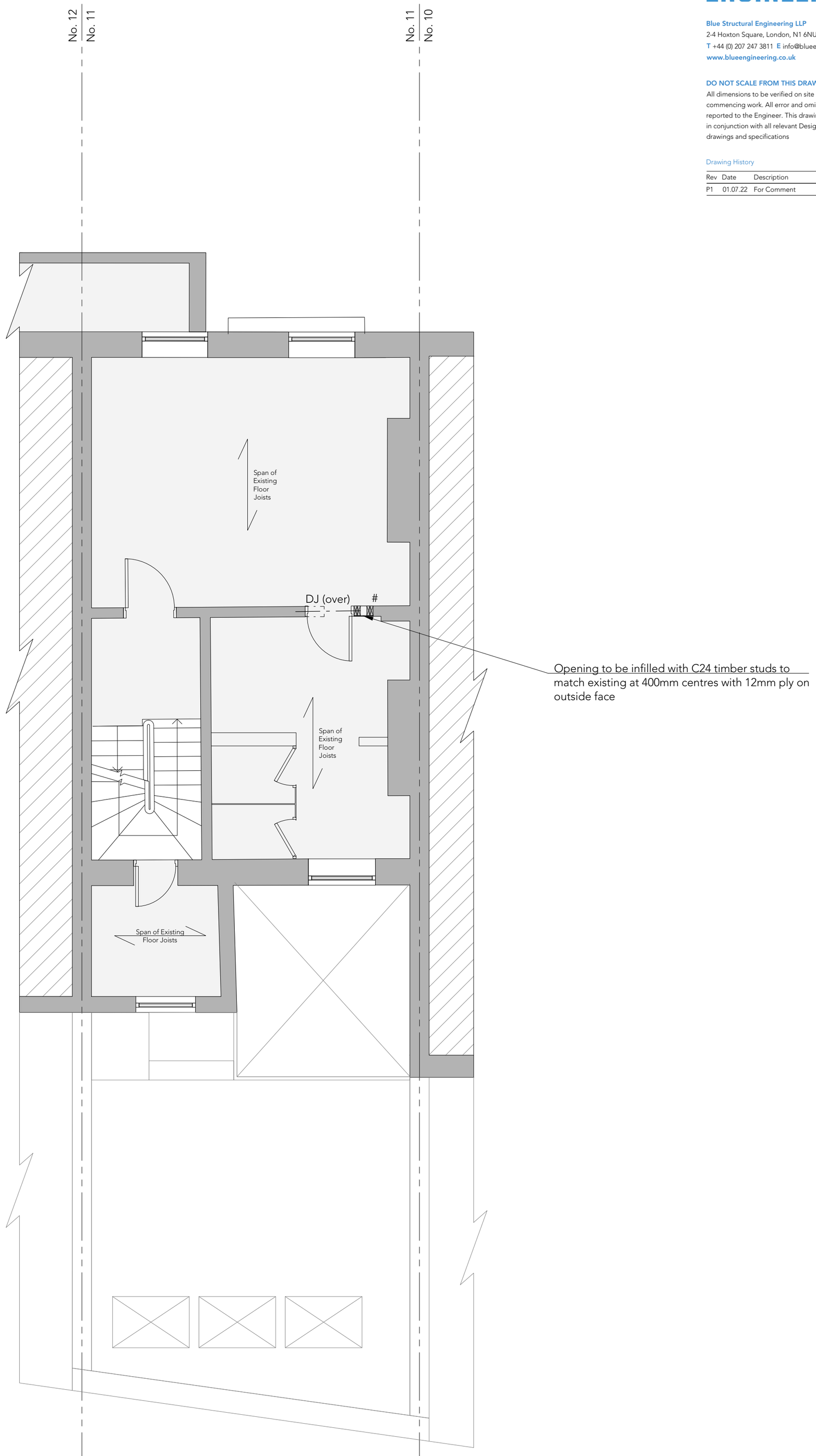
Manthorpe G912 joist seal to be used for timber beams bearing into solid masonry walls - Refer to Manufactures Specification

# Denotes junction between timber stud wall and masonry wall. Abutting stud to have M12 chemical anchors fixed to existing masonry at 400mm centres

All doubled and trebled timber members to be bolted together using M12 bolts and double sided tooth connectors at 500mm centres

DJ = 2no. 150x50mm C24 joists

– – – – – Indicates existing structure to be demolished



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P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
First Floor Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
102

Revision
P1

Scale
1:50 at A2

A2

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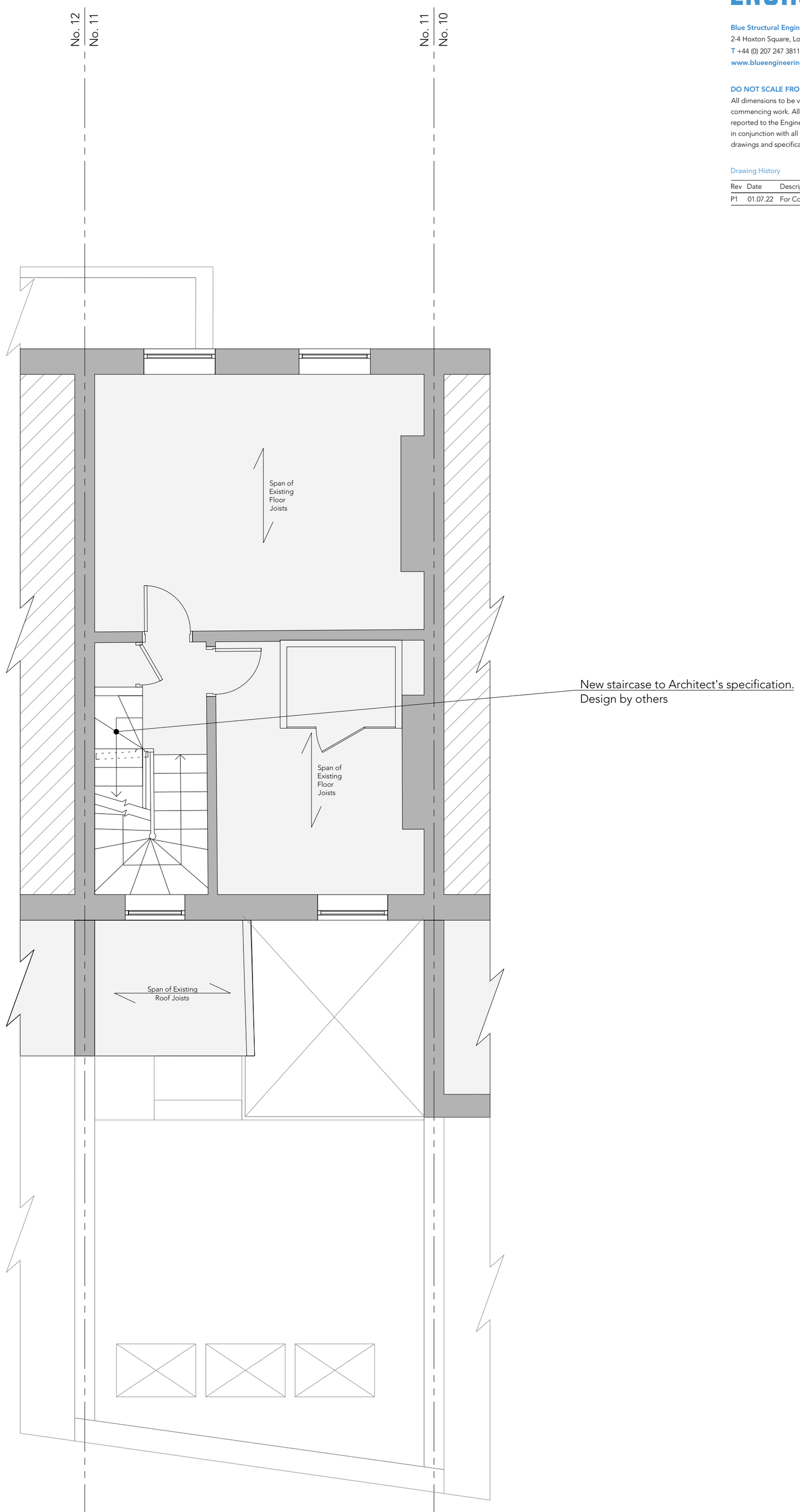
Unhatched walls are non-load bearing and are to be constructed to Architect's specification

Existing timbers to be inspected for general condition, rot and decay. Contact Blue Engineering if poor condition found

– – – – – – Indicates existing structure to be demolished



PRELIMINARY
NOT FOR CONSTRUCTION

Title
Second Floor Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
103

Revision
P1

Scale
1:50 at A2

A2

All cutouts to be cleanly disc cut using non percussive hand tools. Beams and lintels to be tightly dry packed into position

Unhatched walls are non-load bearing and are to be constructed to Architect's specification

30x5mm mild steel restraint straps to be installed at 1200mm horizontal centres, 1200mm long at all junctions between the floor plates and steelwork/masonry

U.N.O. All steelwork is to be grade S355, including plates and connections. Refer to Structural Specification

U.N.O. Steelwork to steelwork connections to be via 10mm thick end plates with 6mm full face fillet weld fixed into web of opposing beam using 4no. M16 bolts

U.N.O. All bolts to be Grade 8.8

Existing timbers to be inspected for general condition, rot and decay. Contact Blue Engineering if poor condition found

Manthorpe G912 joist seal to be used for timber beams bearing into solid masonry walls - Refer to Manufactures Specification

Air gap of minimum 25mm to be kept under new floor joists to allow for deflections unless plasterboard is directly affixed

# Denotes junction between timber stud wall and masonry wall. Abutting stud to have M12 chemical anchors fixed to existing masonry at 400mm centres

All doubled and trebled timber members to be bolted together using M12 bolts and double sided tooth connectors at 500mm centres

TP = 2no. 150x50mm C24 timber post

TJ = 3no. 150x50mm C24 joists

– – – – Indicates line of structure under

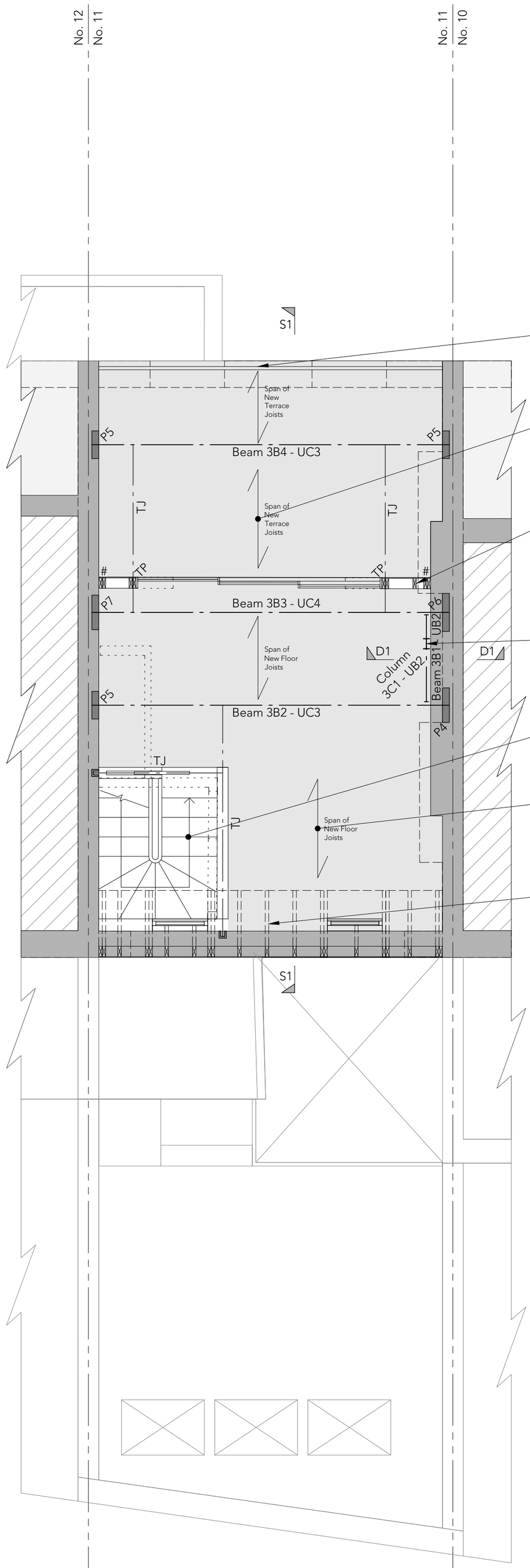
– - - - - – Indicates existing structure to be demolished

⊏ Indicates location of Manthorpe G912 joist seal - Refer to Manufactures Specification

Proposed Steelwork Schedule	
Ref.	Serial Size
UB2	152 x 89 x 16 UB
UC3	152 x 152 x 37 UC
UC4	203 x 203 x 46 UC

Padstone Schedule:
P4: 500x100x15mm thick steel plate
P5: 400x100x10mm thick steel plate
P6: 550x100x150mm deep mass concrete padstone
P7: 500x100x15mm thick steel plate

All padstones to be tightly dry packed into position



New balustrade design by others. Balustrade to be fixed to the walls. **Architect to confirm**

New terrace construction to be 150x50mm C24 joists at 400mm centres with 18mm ply or OSB/3 over

New timber external wall construction to be 150x50mm C24 studs at 400mm centres with 12mm ply on outside face. Wall to be built off 150x50mm sole and wall plates bolted to new floor joists. Studs to be doubled up around openings

Column 3C1 to bear onto Beam 3B1 - Refer to details for connections

New staircase to Architect's specification. Design by others

New timber floor construction to be 150x50mm C24 joists at 400mm centres with 18mm WBP ply over

New mansard roof construction to be formed from 150x50mm C24 timber rafters at 400mm centres with 18mm OSB/3 or WBP ply on outside face. Studs to be built on 150x50mm timber sole plate fixed to structure under. Studs to be doubled up around openings

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Drawing History

Rev	Date	Description	Drawn	Checked
P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
Third Floor Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
104

Revision
P1

Scale
1:50 at A2

A2

All cutouts to be cleanly disc cut using non percussive hand tools. Beams and lintels to be tightly dry packed into position

30x5mm mild steel restraint straps to be installed at 1200mm horizontal centres, 1200mm long at all junctions between the floor plates and steelwork/masonry

U.N.O. All steelwork is to be grade S355, including plates and connections. Refer to Structural Specification

U.N.O. All bolts to be Grade 8.8

Beams over openings are designed with a total deflection limited to span/325. Live load deflection has been limited to span/500. Manufacturer to confirm if acceptable

Existing timbers to be inspected for general condition, rot and decay. Contact Blue Engineering if poor condition found

Manthorpe G912 joist seal to be used for timber beams bearing into solid masonry walls - Refer to Manufactures Specification

All doubled and trebled timber members to be bolted together using M12 bolts and double sided tooth connectors at 500mm centres

TP = 2no. 150x50mm C24 timber post

DJ = 2no. 150x50mm C24 joists

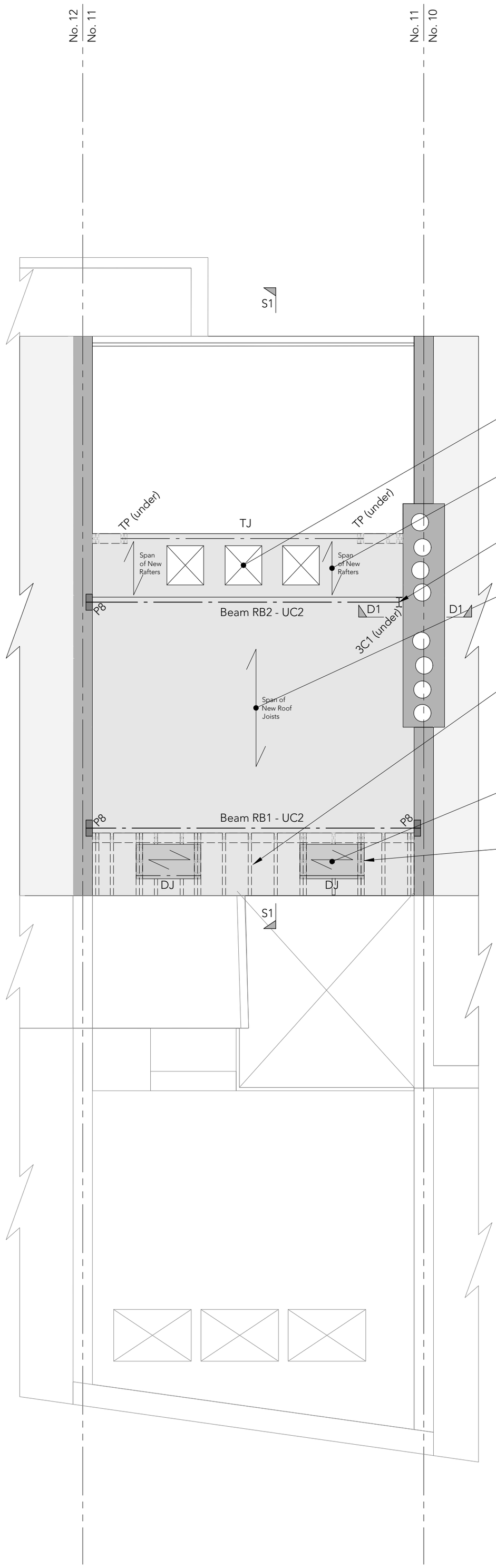
TJ = 3no. 150x50mm C24 joists

– – – – Indicates line of structure under

Proposed Steelwork Schedule	
Ref.	Serial Size
UC2	152 x 152 x 30 UC

Padstone Schedule:
P8: 250x100x10mm thick steel plate

All padstones to be tightly dry packed into position



Openings in roof to be created by trebling up rafters either side and introducing trebled up timber trimmers

New pitched roof construction to be 150x50mm C24 timber rafters at 400mm centres

Beam RB2 to bear onto Column 3C1 - Refer to details for connections

New flat roof construction to be 150x50mm C24 timber joists at 400mm centres with 18mm OSB/3 or WBP ply over

New mansard roof construction to be formed from 150x50mm C24 timber rafters at 400mm centres with 18mm OSB/3 or WBP ply on outside face. Studs to be built on 150x50mm timber sole plate fixed to structure under. Studs to be doubled up around openings

New dormer roof construction to be 150x50mm C24 joists at 400mm centres with 18mm ply or OSB/3 over

New dormer cheeks to be formed from 100x50mm C24 studs at 400mm centres with 12mm ply on outside face. Wall to be built off doubled up timber studs under

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P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
Roof Plan

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

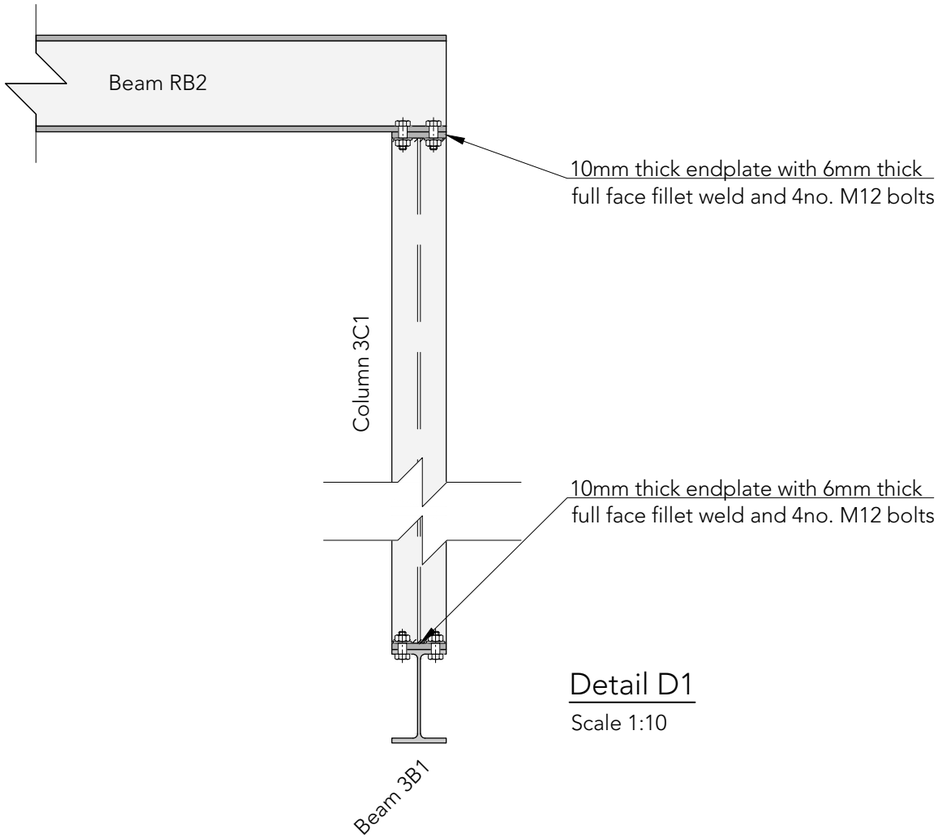
Job No.
8472

Drawing No.
105

Revision
P1

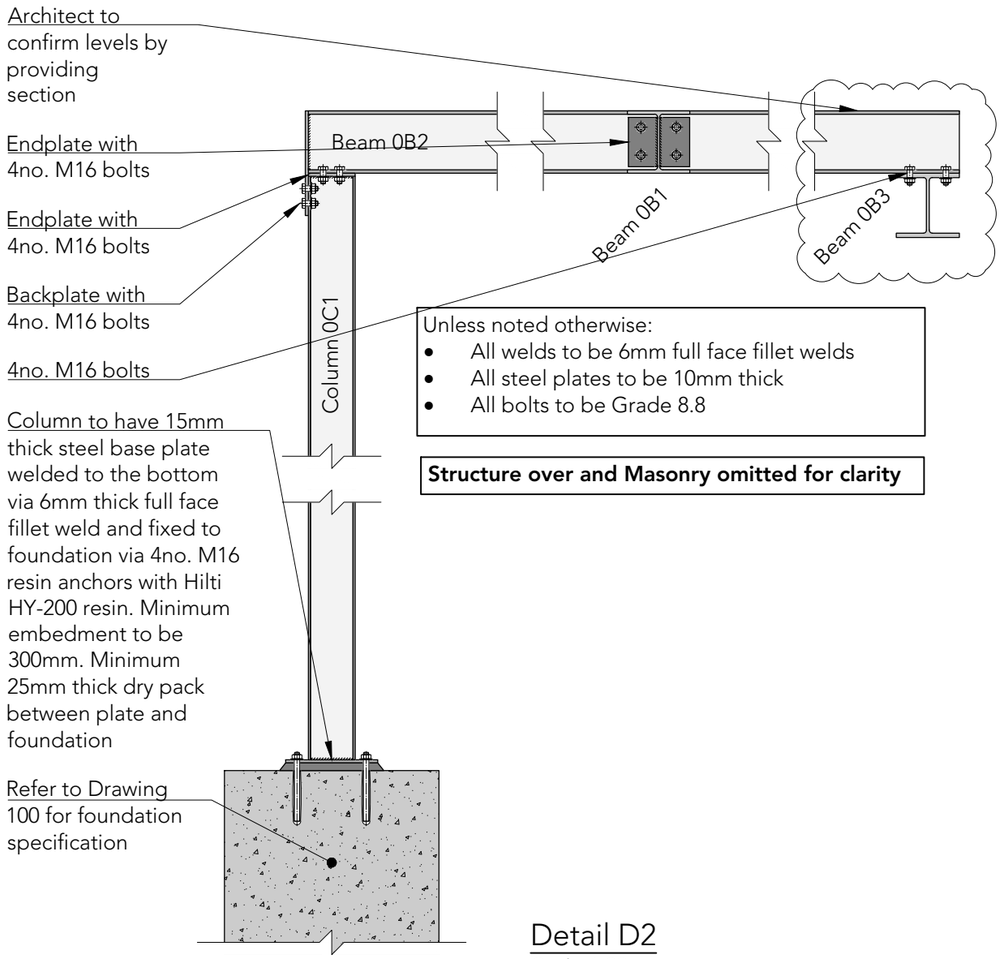
Scale
1:50 at A2

A2



Detail D1

Scale 1:10



Unless noted otherwise:

- All welds to be 6mm full face fillet welds
- All steel plates to be 10mm thick
- All bolts to be Grade 8.8

Structure over and Masonry omitted for clarity

Detail D2

Scale 1:20

A3

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PRELIMINARY
NOT FOR CONSTRUCTION

Title
Structural Details

Project
11 Chamberlain Street,
NW1 8XD

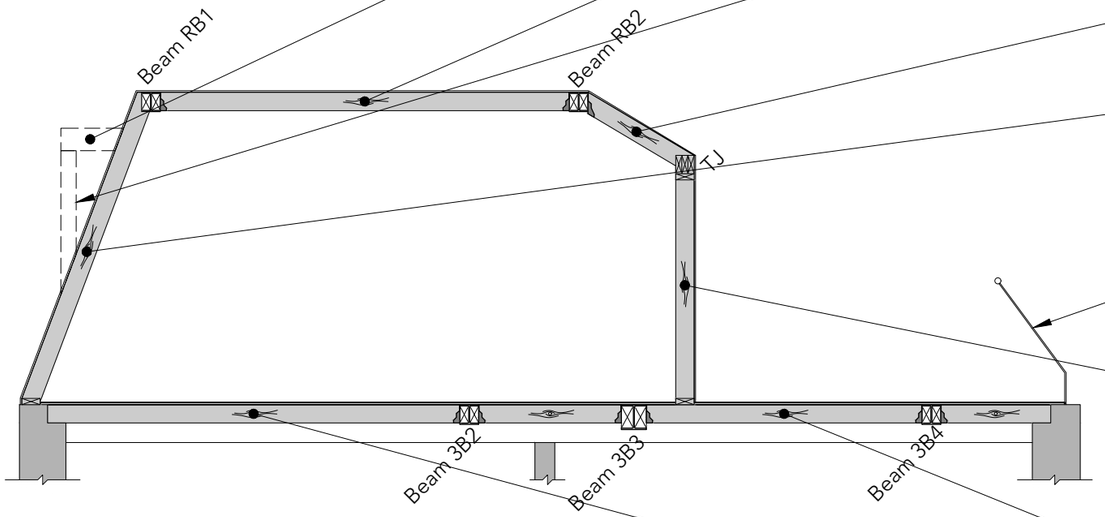
Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
200

Revision
P1

Scale
Varies at A3



New dormer roof construction to be 150x50mm C24 joists at 400mm centres with 18mm ply or OSB/3 over

New flat roof construction to be 150x50mm C24 timber joists at 400mm centres with 18mm OSB/3 or WBP ply over

New dormer cheeks to be formed from 100x50mm C24 studs at 400mm centres with 12mm ply on outside face. Wall to be built off doubled up timber studs under

New pitched roof construction to be 150x50mm C24 timber rafters at 400mm centres

New mansard roof construction to be formed from 150x50mm C24 timber rafters at 400mm centres with 18mm OSB/3 or WBP ply on outside face. Studs to be built on 150x50mm timber sole plate fixed to structure under. Studs to be doubled up around openings

New balustrade design by others. Balustrade to be fixed to the walls. **Architect to confirm**

New timber external wall construction to be 150x50mm C24 studs at 400mm centres with 12mm ply on outside face. Wall to be built off 150x50mm sole and wall plates bolted to new floor joists. Studs to be doubled up around openings

New terrace construction to be 150x50mm C24 joists at 400mm centres with 18mm ply or OSB/3 over

New timber floor construction to be 150x50mm C24 joists at 400mm centres with 18mm WBP ply over

Section S1
Scale 1:50

A3

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P1	01.07.22	For Comment	DB	JLA

PRELIMINARY
NOT FOR CONSTRUCTION

Title
Structural Section

Project
11 Chamberlain Street,
NW1 8XD

Client
Jaakko Ahmala and Liisa Tornivaara

Job No.
8472

Drawing No.
300

Revision
P1

Scale
1:50 at A3