

12-14 Greville Street

Structural Calculations for Crossrail submission

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Proposed load take down	P1 – P12

Version

Section	Ver	Date	Pages			Notes
			Deleted	Amended	Added	
All	1	04/03/2019				First Issue
1	2	21/03/2019		1		Incorporate comments from Crossrail

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 Reviewed by: **Paul Batty BSc CEng MIStructE MICE**
 Job Number: **23327**

Introduction

These calculations are in relation to Section 3.8, Compliance Criteria B in 'Crossrail: A technical guidance for developers' document dated December 2016. Compliance Criteria B requires 'Evidence that Surcharge Loading or transferred pile loads imposed on Crossrail assets is < 50kPa'. These calculations contain an existing load take down of the current buildings at 12-14 Greville Street based on assumptions on what we know about the buildings. This is followed by a load take down on the current proposals. For both load take downs an average pressure is calculated at invert level of the proposed raft (13.48mOD) to compare the existing and proposed surcharges at the Crossrail tunnel.

Version 2

The imposed loads have been reduced in accordance with BS6399-1:1996 table 2. The existing buildings are five storeys and the proposed building is six storeys, so both imposed loads have been reduced by 40%.

Summary Table

	Existing Loads	Proposed Loads
<i>Dead Load</i>	32.2kN/m ²	68.6kN/m ²
<i>Imposed Load with reduction</i>	9.8kN/m ²	15.0kN/m ²
<i>Soil</i>	-	-14.8kN/m ²
<i>Total</i>	42.0kN/m ²	68.8kN/m ²

The surcharge of the proposed development is higher than the existing, but the proposed surcharge is <75kN/m², which is generally accepted.

EXISTING LOADS - 12/13 GREVILLE STREET

PLAN AREA = 94.6 m²

- ROOF ASSUMED LOADS (Ex 1)

SLATES, BATTENS, FELT	0.55	kN/m ²
TIMBER BAFTERS / INSULATION	0.2	kN/m ²
CEILING / SERVICES	0.15	kN/m ²

$\Sigma = 0.9$ kN/m²

SNOW 0.6 kN/m²

DL = 85.14 kN LL = 56.76 kN

- TYPICAL FLOOR ASSUMED LOADS (Ex 2)

TIMBER BOARDS (PLY)	0.15	kN/m ²
TIMBER JOISTS	0.2	kN/m ²
CEILING / SERVICES	0.15	kN/m ²

$\Sigma = 0.5$ kN/m²

IMPOSED LOAD (OFFICE) = 2.5 + 1
= 3.5 kN/m²

DL = 47.3 kN LL = 331.1 kN

- EXISTING MASONRY WALLS (Ex 3)

$l = 15.2m + 7.5m + 6.5m + 8.0m$
= 37.2m

MASONRY WALLS 550 @ GROUND, 350 @ ROOF
ASSUME AN AVERAGE OF 450mm, h = 17m

TOTAL WEIGHT = 37.2m x 17m x 20 kN/m³ x 0.45m
= 5691.6 kN

- BASEMENT FLOOR (E4)

50 SCREED	1.2	kN/m ²
INSULATION	0.1	kN/m ²
100 RC SLAB	2.5	kN/m ²

$\Sigma = 3.8 \text{ kN/m}^2$

(+ GF @ REAR, A=52 m²)

IMPOSED LOAD (OFFICE) = 2.5 · 1 = 3.5 kN/m²

DL = 557.1 kN LL = 513.1 kN.

TOTAL DL = 85.1 + 5 × 47.3 + 5691.6 + 557 = 6570.2 kN.

TOTAL LL = 56.8 + 5 × 331.1 + 513.1 = 2225 kN.

EXISTING LOADS - 14 GREVILLE STREET

- ROOF (E5)

PLAN AREA = 246 m²

LOADING

ASHPHALT WATER PROOFING	0.45	kN/m ²
TIMBER JOISTS / INSULATION	0.15	kN/m ²
STEELWORK	0.5	kN/m ²
CEILING SERVICES	0.15	kN/m ²

$\Sigma = 1.25 \text{ kN/m}^2$

SNOW / ACCESS 0.75 kN/m²

DL = 307.5 kN LL = 184.5 kN.

- TYPICAL FLOORS (E6)

50 SCREED	1.2	kN/m ²
150 SLAB / PLANKS	3.7	kN/m ²
STEELWORK	0.5	kN/m ²
CEILING / SERVICES	0.15	kN/m ²

$$\Sigma = 5.6 \text{ kN/m}^2$$

IMPOSED LOAD (OFFICE) = 2.5 + 1 = 3.5 kN/m²

- CONCRETE FLAT ROOF (Ex7)

ASPHALT WATERPROOFING/INSULATION	0.45 kN/m ²
50 SCREED	1.20 kN/m ²
150 SLAB/PLANKS	3.70 kN/m ²
CEILING SERVICES	0.15 kN/m ²

$$\Sigma = 5.5 \text{ kN/m}^2$$

$$= 0.75 \text{ kN/m}^2$$

IMPOSED LOAD (NO ACCESS)

- BASEMENT FLOOR SLAB (Ex4)

50 SCREED	1.2 kN/m ²
INSULATION	0.1 kN/m ²
100 RC SLAB	2.5 kN/m ²

$$\Sigma = 3.8 \text{ kN/m}^2$$

$$= 2.5 + 1 = 3.5 \text{ kN/m}^2$$

IMPOSED LOAD (OFFICE)

FLOOR	AREA	ROOF AREA	DL	L.L.
ROOF	246 m ²		307 kN	184 kN
3 RD	246 m ²	68.4 m ²	1463 kN	912 kN
2 ND	340 m ²	14.9 m ²	1923 kN	1201 kN
1 ST	355 m ²	68.8 m ²	2373 kN	1294 kN
G _F	424 m ²	-	2374 kN	1484 kN
LG _F	107 m ²	-	599 kN	375 kN
B	317 m ²	107 m ²	1611 kN	1110 kN

107 m²

BELOW FLOOR, VOID AREA

$$\Sigma = 10650 \text{ kN} \quad 6560 \text{ kN}$$

COMBINED LOADS

$$12/13(DL) = 6570.2 \text{ kN} \quad 12/13(LL) = 2225 \text{ kN}$$

$$14(DL) = 10650 \text{ kN} \quad 14(LL) = 6560 \text{ kN}$$

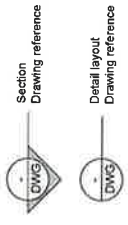
$$\Sigma(DL+LL) = 26005 \text{ kN}$$

$$\text{TOTAL AREA} = 535 \text{ m}^2$$

$$\text{EXISTING PRESSURE} = 48.6 \text{ kN/m}^2$$

E x 4

Notes:
1) All dimensions to be checked on site
2) Do not scale from this drawing



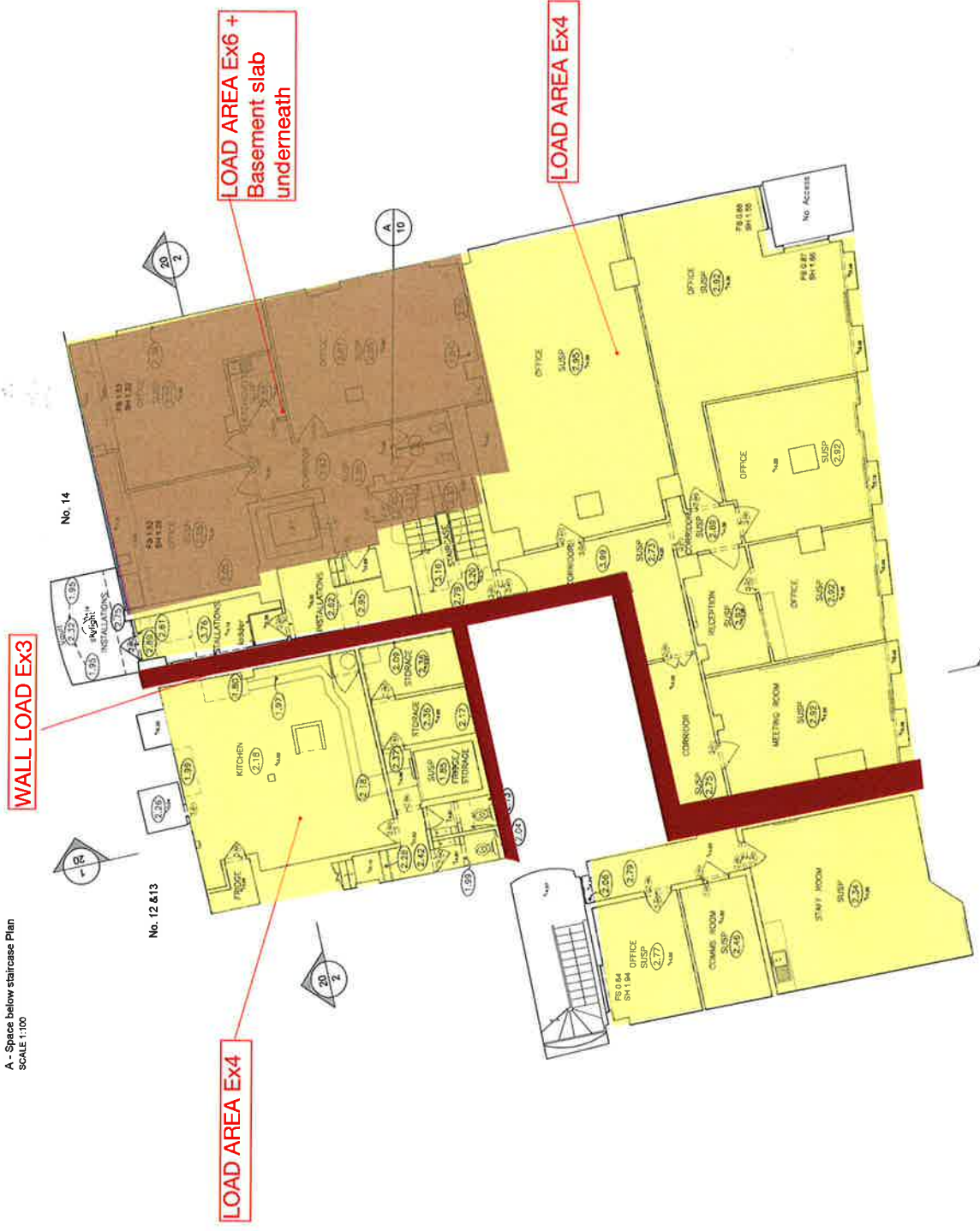
DO	For comment	11.08.15
REV	Issue	Date

Frost Architects

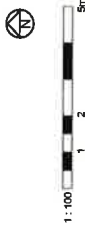
PROJECT
12 - 14 Greville Street

DRAWING
Existing Lower Ground Floor Plan

Status	DESIGN
SCALE	1:100
SIZE	A2
DRAWN BY	ECH
PROJECT NO.	15229
DRAWING NO.	10
REV.	DO



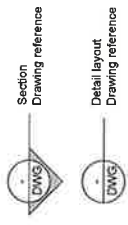
A - Space below staircase Plan
SCALE 1:100



Existing Lower Ground Floor Plan
SCALE 1:100

5 x 5

Notes:
1) All dimensions to be checked on site.
2) Do not scale from this drawing.



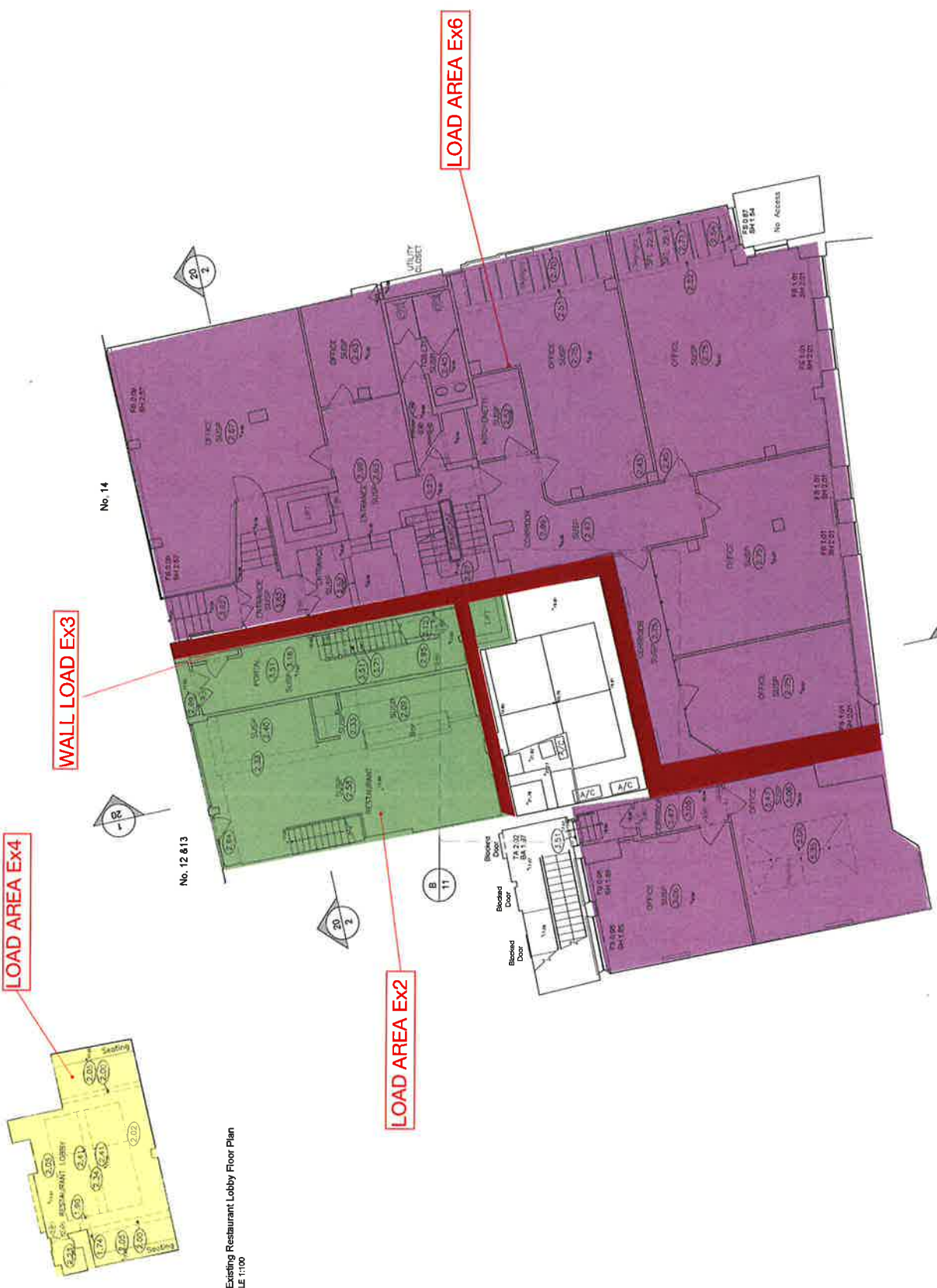
DO	For comment	11.08.15
Rev	Issue	Date

Frost Architects

PROJECT
12 - 14 Greville Street

DRAWING
Existing Ground Floor Plan

Status	DESIGN
SCALE	1:100
SIZE	A2
DRAWN BY	EOH
PROJECT NO.	15229
DRAWING NO.	11
REV.	D0



B - Existing Restaurant Lobby Floor Plan
SCALE 1:100

Ex 6

Notes:
1) All dimensions to be checked on site
2) Do not scale from this drawing.



Section
Drawing reference

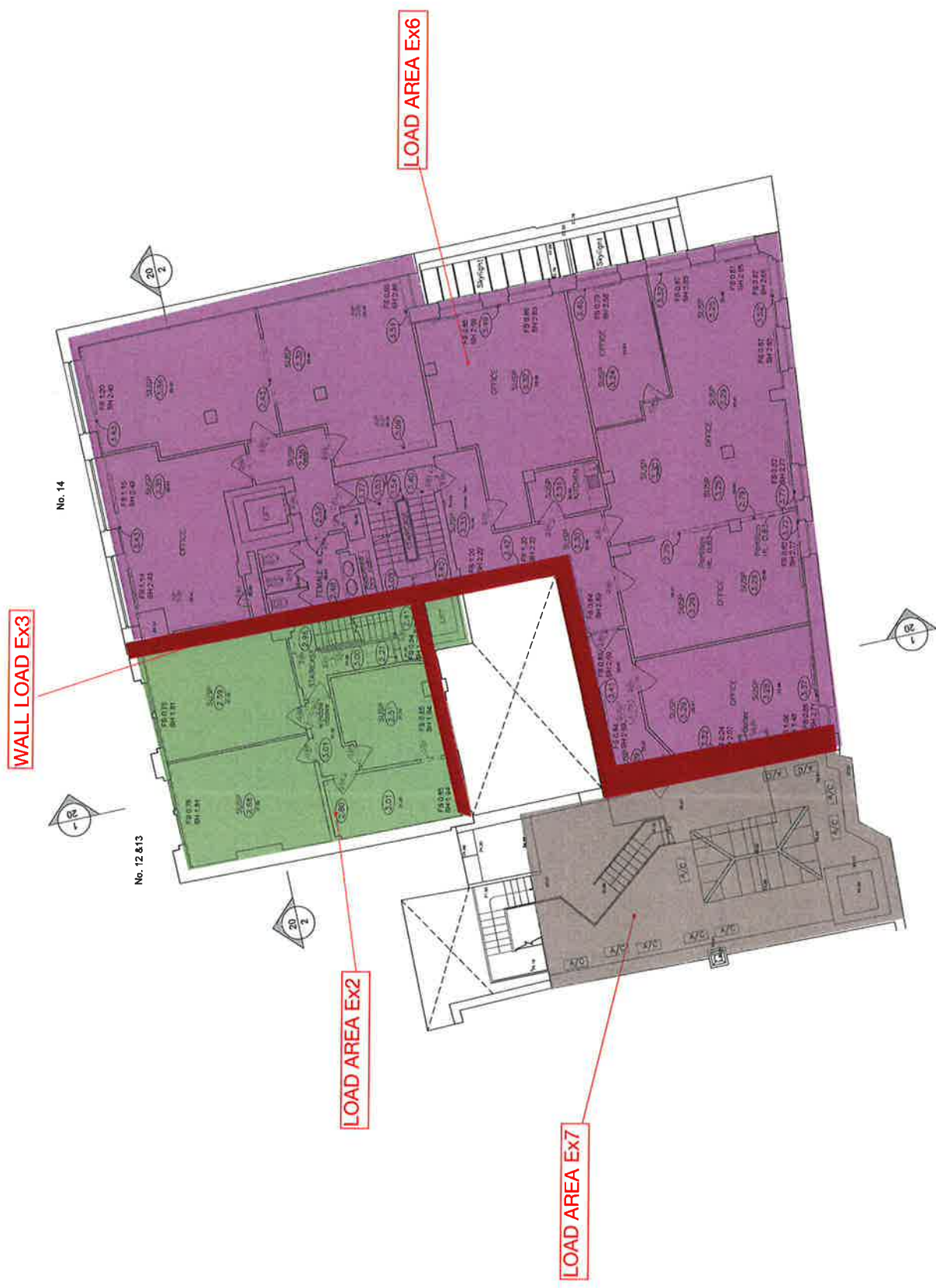
D0	For comment	11.06.15
Rev	Issue	Date

Frost Architects

PROJECT
12 - 14 Greville Street

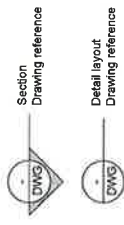
DRAWING
Existing First Floor Plan

STATUS	DESIGN
SCALE	1:100
SHEET	A2
DRAWN BY	ECH
PROJECT NO.	15229
DRAWING NO.	12
REV.	D0



Ex 7

Notes:
1) All dimensions to be checked on site.
2) Do not scale from this drawing.



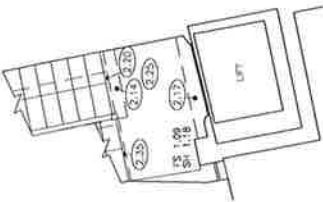
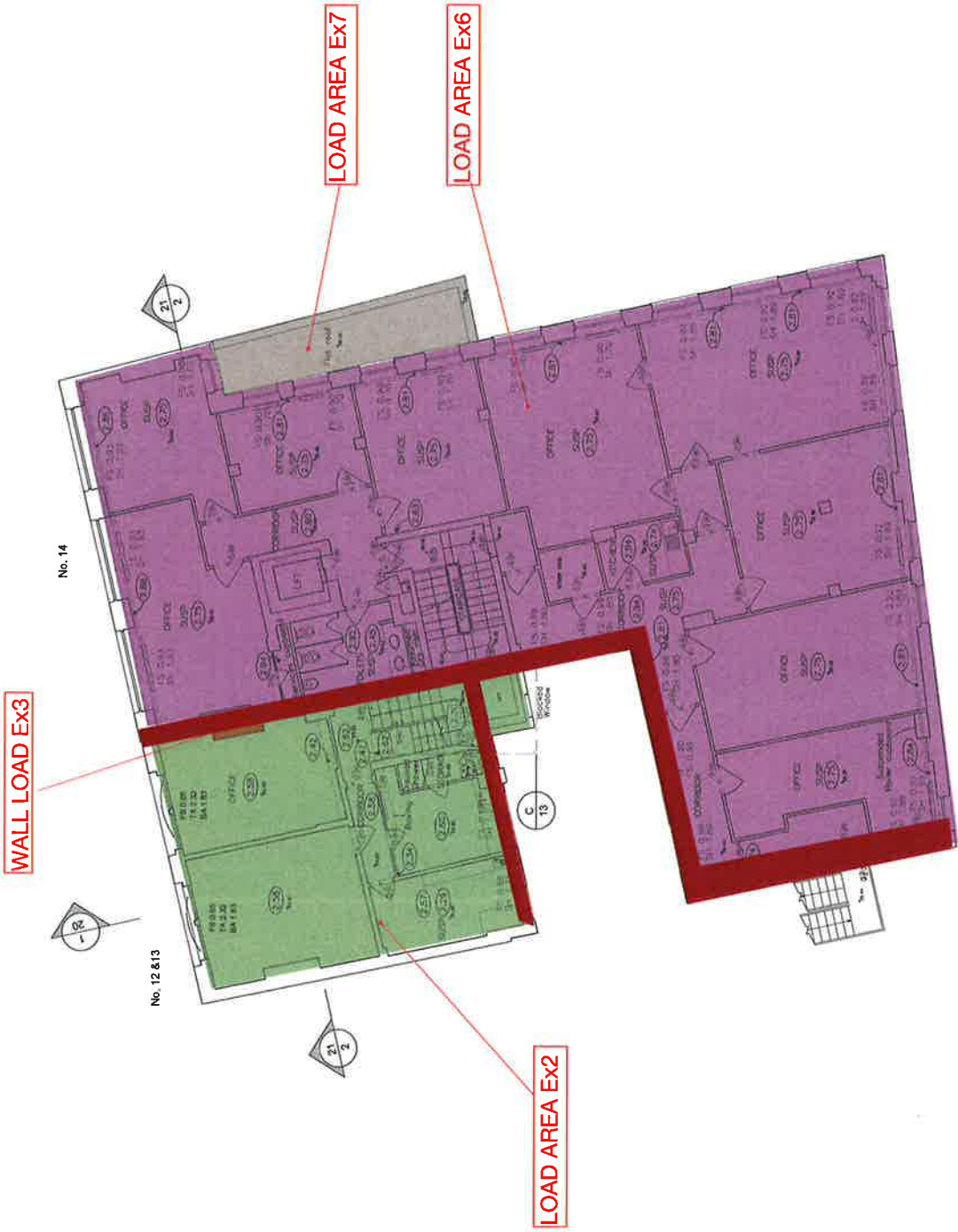
D0	For comment	11.08.15
Rev	Issue	Date

Frost Architects

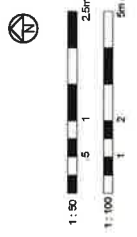
PROJECT
12 - 14 Greville Street

DRAWING
Existing Second Floor Plan

Status	DESIGN
Scale	1:100/50
Size	A2
Drawn by	ECH
Project No.	15229
Drawings No.	13
Rev.	D0



C - Existing Staircase Plan
SCALE 1:50



Ex 8

Notes:
1) All dimensions to be checked on site.
2) Do not scale from this drawing.



DD	For comment	11.08.15
Rev	Issue	Date

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PROJECT
12 - 14 Greville Street

DRAWING
Existing Third Floor Plan

Status	DESIGN
Scale	1:100
Size	A2
Drawn by	EQH
Project No.	15229
Drawing No.	14
Rev.	D0



FTT x 9

Notes:
1) All dimensions to be checked on site.
2) Do not scale from this drawing.



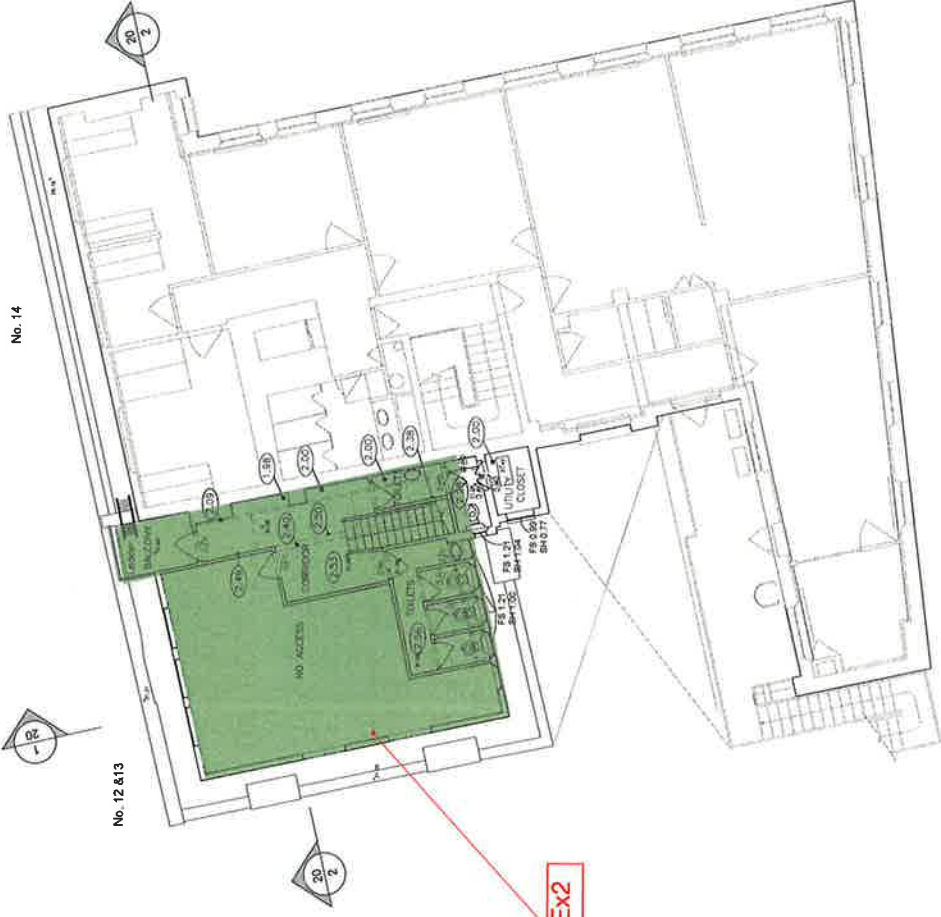
D0	For comment	11.08.15
Rev	Issue	Date

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PROJECT
12 - 14 Greville Street

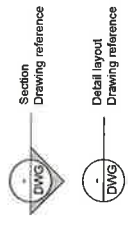
DRAWING
Existing Fourth Floor Plan

Status	DESIGN	Size	A2
Scale	1:100	Drawn by	ECH
Product No.	15229	Drawing No.	15
Rev.			D0



E x 10

Notes:
1) All dimensions to be checked on site.
2) Do not scale from this drawing.



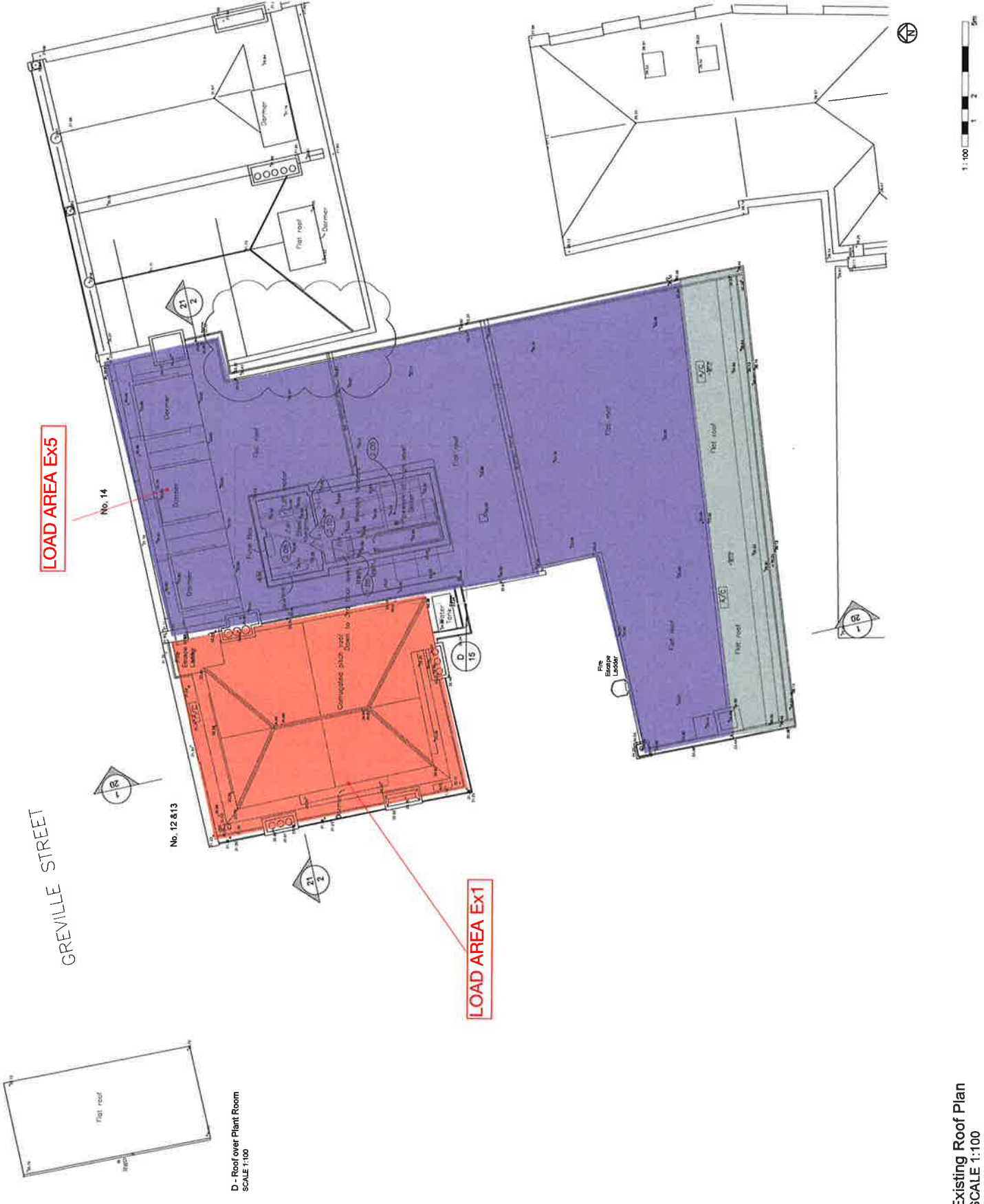
DD	For comment	11.08.15	Date
Rev	Issue		

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PROJECT
12 - 14 Greville Street

DRAWING
Existing Roof Plan

Status	DESIGN
SCALE	1:100
SIZE	A2
DRAWN BY	EGH
PROJECT NO.	15229
DRAWING NO.	16
REV.	D0

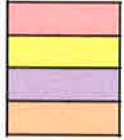


D - Roof over Plant Room
SCALE 1:100

GREVILLE STREET

Finishes

	Zone	Screed	Insulation/	Finishes	Ceiling/Services	Total	
Timber Roof	A	0	0.2	0.45	0.15	0.8	kN/m ²
Raised floor	B	0	0	0.4	0.15	0.55	kN/m ²
Flat roof	C	1.2	0.45	0.95	0.15	2.75	kN/m ²
Basement	D	1.2	0.1	0.2	0	1.5	kN/m ²



Loading

No	Finishes	DEAD	LIVE
1	A Timber roof	0.8	0.8
2	B Office - conc	7.4	3.5
3	B Office - lightweight	0.6	3.5
4	B Office - 300 conc	8.1	3.5
5	B Office - ground	7.4	4.0
6	C Office - lightweight	2.8	4.0
7	C Conc roof	9.6	0.8
8	C Conc roof - plant	9.6	5.0
9	D Raft	20.3	4.0
10	D 200 slab	6.5	4.0

ROOF

⑧ CONC ROOF AREA = 59.6 m²

① TIMBER ROOF AREA = 245.0 m² PLANT AREA = 32.5 m²

$$DL = (59.6 \text{ m}^2 \times 9.6 \text{ kN/m}^2) + (277.5 \text{ m}^2 \times 0.8 \text{ kN/m}^2)$$

$$= 794.2 \text{ kN}$$

$$LL = (59.6 \text{ m}^2 \times 5.0 \text{ kN/m}^2) + (245.0 \text{ m}^2 \times 0.75 \text{ kN/m}^2)$$

$$+ (32.5 \text{ m}^2 \times 3 \text{ kN/m}^2)$$

$$= 579.3 \text{ kN}$$

FLOOR

④ CONC FLOOR AREA = 367.6 m²

③ TIMBER FLOOR AREA = 83.9 m²

$$DL = (367.6 \text{ m}^2 \times 8.1 \text{ kN/m}^2) + (83.9 \text{ m}^2 \times 0.55 \text{ kN/m}^2) \times \frac{1}{2}$$

$$= 3011.1 \text{ kN}$$

$$LL = (367.6 \text{ m}^2 + \frac{83.9 \text{ m}^2}{2}) \times 3.5 \text{ kN/m}^2$$

$$= 1433.4 \text{ kN}$$

THIRD

② CONC FLOOR AREA = 367.6 m²

⑦ CONC ROOF AREA = 48.9 m²

③ TIMBER FLOOR AREA = 83.9 m²

① TIMBER ROOF AREA = 17.4 m²

$$DL = (367.6 \text{ m}^2 \times 7.4 \text{ kN/m}^2) + (48.9 \text{ m}^2 \times 9.6 \text{ kN/m}^2)$$

$$+ (83.9 \text{ m}^2 \times 0.55 \text{ kN/m}^2 \times \frac{1}{2}) + (17.4 \text{ m}^2 \times 0.8 \text{ kN/m}^2 \times \frac{1}{2})$$

$$= 3219.7 \text{ kN}$$

$$LL = (367.6 \text{ m}^2 + \frac{83.9 \text{ m}^2}{2}) \times 3.5 \text{ kN/m}^2 + (48.9 \text{ m}^2 + \frac{17.4 \text{ m}^2}{2})$$

$$\times 0.75 \text{ kN/m}^2$$

$$= 1476.6 \text{ kN}$$

SECOND / FIRST

② CONC FLOOR AREA = 436.6 m^2

③ TIMBER FLOOR AREA = 101.5 m^2 FIRST ROOF = 4.23 m^2

$$DL = (436.6 \text{ m}^2 \times 7.4 \text{ kN/m}^2) + (101.5 \text{ m}^2 \times \frac{1}{2} \times 0.55 \text{ kN/m}^2)$$

$$= 3258.7 \text{ kN} \quad (+ 3.38 \text{ kN})$$

$$LL = (436.6 \text{ m}^2 + \frac{101.5 \text{ m}^2}{2}) \times 3.5 \text{ kN/m}^2$$

$$= 1705.7 \text{ kN} \quad (+ 3.17 \text{ kN})$$

GROUND

⑤ CONC FLOOR AREA = 436.6 m^2

⑥ TIMBER FLOOR AREA = 105.7 m^2

$$DL = 3261.0 \text{ kN}$$

$$LL = (436.6 \text{ m}^2 + \frac{105.7 \text{ m}^2}{2}) \times 4.0 \text{ kN/m}^2$$

$$= 1957.8 \text{ kN}$$

BASEMENT

⑨ 750 FLOOR AREA = 436.6 m^2

⑩ 200 SLAB AREA = 105.7 m^2

$$DL = (436.6 \text{ m}^2 \times 20.3 \text{ kN/m}^2) + (\frac{105.7 \text{ m}^2}{2} \times 6.5 \text{ kN/m}^2)$$

$$= 9207 \text{ kN}$$

$$LL = (436.6 \text{ m}^2 + \frac{105.7 \text{ m}^2}{2}) \times 4.0 \text{ kN/m}^2$$

$$= 1958 \text{ kN}$$

VERTICAL ELEMENTS

9 No. C1 = $9 \times 0.45 \times 0.45 \times 25 \text{ kN/m}^3 \times 2.95 \text{ m}$
= 134.4 kN.

23 No. C2 = $23 \times 0.25 \times 0.25 \times 25 \text{ kN/m}^3 \times 3.35 \text{ m}$
= 120.4 kN.

26 No. C3 = $26 \times 0.3 \times 0.3 \times 25 \text{ kN/m}^3 \times 3.35 \text{ m}$
= 195.9 kN

5 No. C4 = $5 \times 0.2^2 \times \pi \times 25 \text{ kN/m}^3 \times 3.65 \text{ m}$
= 57.3 kN.

14 No. C5 = $14 \times 0.15^2 \times \pi \times 25 \text{ kN/m}^3 \times 3.35 \text{ m}$
= 82.9 kN.

TOTAL WALL AREA = 618 m²
THICKNESS = 0.2 m.

Wt = $618 \times 0.2 \times 25 \text{ kN/m}^3$
= 3090 kN.

TOTAL LOAD

DL =	794.2	kN	LL =	579.1	kN
	3011.1	kN		1433.4	kN
	3219.7	kN		1476.6	kN
(+3.4)	2x 3258.7	kN	(+3.2)	2x 1705.7	kN
	3261.0	kN		1958.0	kN
	9207.0	kN		1958.0	kN
	134.4	kN			
	120.4	kN			
	195.9	kN			
	57.3	kN			
	82.9	kN			
	3090	kN			

$\Sigma = 10820 \text{ kN}$

$\Sigma = 29695 \text{ kN}$

TOTAL $\Sigma = 40515 \text{ kN}$ AREA = 432.7 m²

PROPOSED PRESSURE = $40515 / 432.7$
= 93.6 kN/m²

$$\text{EXISTING FFL} = 14.28 - 0.1 (\text{FINISHES}) - 0.1 (\text{SCAFF})$$
$$\text{W/S OF EXISTING} = 14.08$$

$$\text{PROPOSED SSL} = 14.28 - 0.75 (\text{RAFT}) - 0.05 (\text{BLINDING})$$
$$\text{W/S OF PROPOSED} = 13.48$$

$$\hookrightarrow \text{WEIGHT OF SOIL} = 14.08 - 13.48 \times 18 \text{ kN/m}^3$$
$$= 10.8 \text{ kN/m}^2$$

WEIGHT OF SOIL IN REAR OF 12/13 GREVILLE STREET.

$$17.55 - 14.28 = 3.27 \text{ m} \quad A = 7.7 \times 4.7 = 36 \text{ m}^2$$

$$\text{Wt} = (3.27 \times 36 \times 18 \text{ kN/m}^3) / 535 \text{ m}$$
$$= 3.96 \text{ kN/m}^2$$

$$\text{Wt (SOIL)} = 14.8 \text{ kN/m}^2$$

NET INCREASE IN PRESSURE

$$= 93.6 \text{ kN/m}^2 - 14.8 \text{ kN/m}^2 - 48.6 \text{ kN/m}^2$$

$$= 30.2 \text{ kN/m}^2 < 50 \text{ kN/m}^2$$

OK

Notes :-

- This drawing is to be used in conjunction with all relevant drawings, reports and specifications.
- Do not scale drawings. Dimensions in this drawing are given in millimeters. Use metric dimensions only. To check the drawing has been printed to the intended size, check the bottom left corner of the drawing is 100mm x 70mm.
- Health & Safety: - All works are to be carried out in accordance with the project 'Information Panel' and 'Safe Plan'.
- For general notes refer to Drawing No. 23327/01.

1	10/23	SA	TM	Issued for Information, RIBA Stage 3
1	10/23	SA	TM	Issued for party wall awards
Ver	Date	Drawn	Eqd	Approved

**12-14 GREVILLE STREET
LONDON EC1N 8SB
BASEMENT PLAN**

Scale: 1:100

Drawing No: 23327/09

Ver: 2

Drawn: Sophie Anp
Eg: Tom Matuzaka

Checked: [Signature]
Eg: [Signature]

Project: 12-14 Greville Street
Client: [Name]

STAGE 3 REPORT
NOT FOR CONSTRUCTION

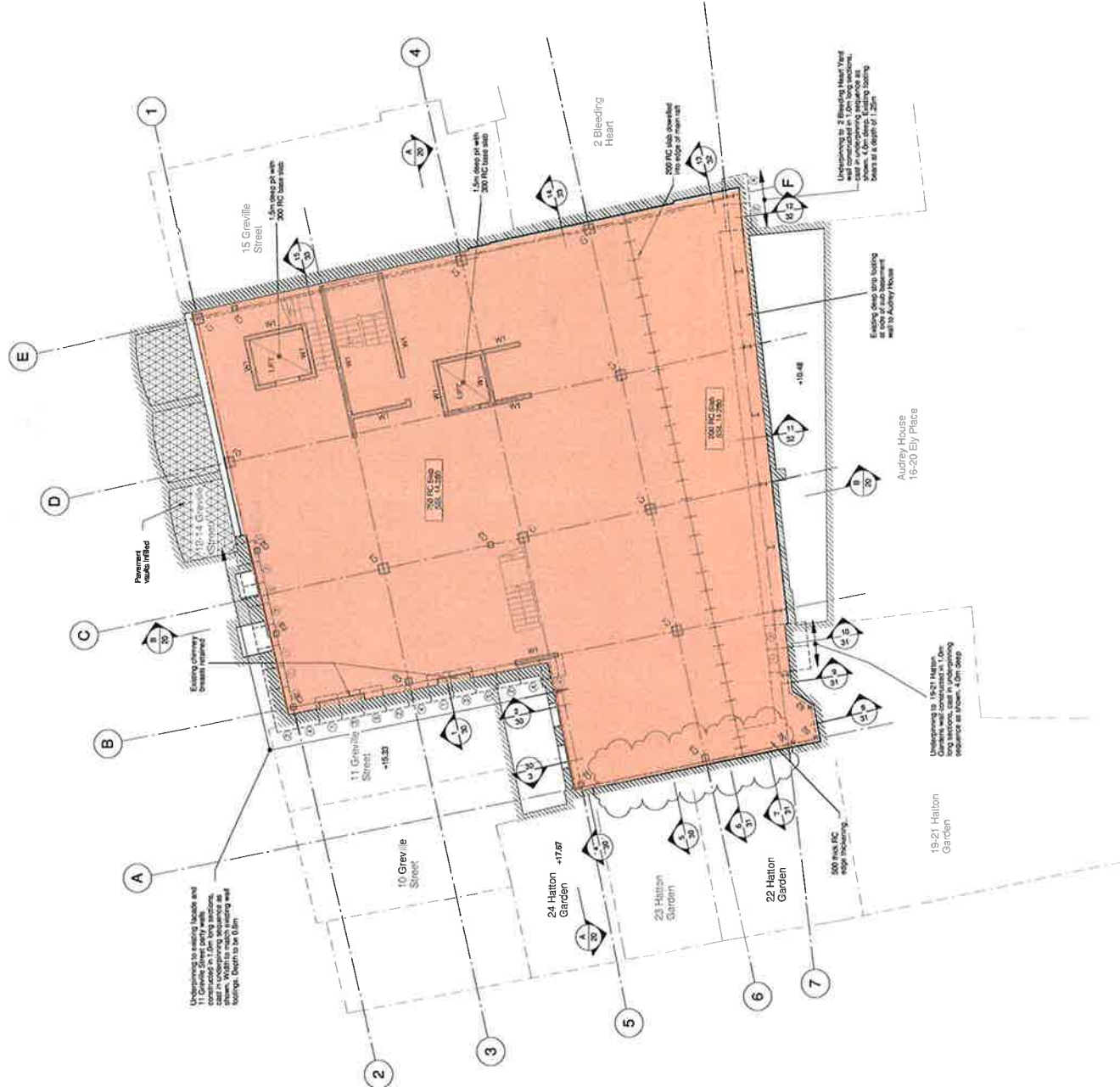
Prices & Myers
Civil Engineering
37 Abchurch Lane
London EC4A 3DF
020 7631 5128
info@pricesandmyers.com
www.pricemys.com

COLUMNS	
U1	400x400 RC
U2	300x300 RC
U3	300x300 RC
U4	400x400 RC
U5	300x300 RC
U6	300x300 RC
U7	300x300 RC
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U24	300x300 RC
U25	300x300 RC
U26	300x300 RC
U27	300x300 RC
U28	300x300 RC
U29	300x300 RC
U30	300x300 RC

BEAMS	
B1	250x250x100 RC
B2	150x150x75 RC
B3	250x250x100 RC
B4	250x250x100 RC
B5	250x250x100 RC
B6	250x250x100 RC
B7	250x250x100 RC
B8	250x250x100 RC
B9	250x250x100 RC
B10	250x250x100 RC
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B23	250x250x100 RC
B24	250x250x100 RC
B25	250x250x100 RC
B26	250x250x100 RC
B27	250x250x100 RC
B28	250x250x100 RC
B29	250x250x100 RC
B30	250x250x100 RC

WALLS	
W1	200 RC Wall

TIMBER	
T1	100x40 C24 Joist @ 400mm
T2	150x50 C24 Joist @ 400mm



Underpinning to existing foundations and connections in 1.0m long sections, to be carried out in 1.0m long sections. Width in each section and footings. Depth to be 0.6m.

Underpinning to 2 Bleeding Holes. Cast in underpinning concrete at 1.0m depth. Cast in concrete to 1.2m depth. Cast in concrete to 1.2m depth.

Existing door into existing sub-basement next to Audrey House

Underpinning to 1.0m depth. Cast in concrete to 1.2m depth. Cast in concrete to 1.2m depth.

- NOTES :-**
- This drawing is to be read in conjunction with all relevant Architect, Engineer's, and specialist drawings and specifications.
 - Do not scale from the drawing in either paper or electronic format. All dimensions are to be taken from the drawing. This drawing has been printed to the intended scale and should be 30mm long @ A1 or 25mm long @ A2.
 - Health & Safety :-**
All specific drawing notes are to be read in conjunction with the project "Health and Safety" and "Site Rules".
For general notes refer to Drawing No. 23327/01.

1	10/11/10	SA	TM	Issued for Information (RIBA Stage 3)
2	10/11/10	SA	TM	Issued for Information (RIBA Stage 3)
3	10/11/10	SA	TM	Issued for party wall awards
4	10/11/10	SA	TM	Issued for party wall awards
5	10/11/10	SA	TM	Issued for party wall awards
6	10/11/10	SA	TM	Issued for party wall awards
7	10/11/10	SA	TM	Issued for party wall awards
8	10/11/10	SA	TM	Issued for party wall awards
9	10/11/10	SA	TM	Issued for party wall awards
10	10/11/10	SA	TM	Issued for party wall awards
11	10/11/10	SA	TM	Issued for party wall awards
12	10/11/10	SA	TM	Issued for party wall awards
13	10/11/10	SA	TM	Issued for party wall awards
14	10/11/10	SA	TM	Issued for party wall awards
15	10/11/10	SA	TM	Issued for party wall awards
16	10/11/10	SA	TM	Issued for party wall awards
17	10/11/10	SA	TM	Issued for party wall awards
18	10/11/10	SA	TM	Issued for party wall awards
19	10/11/10	SA	TM	Issued for party wall awards
20	10/11/10	SA	TM	Issued for party wall awards
21	10/11/10	SA	TM	Issued for party wall awards
22	10/11/10	SA	TM	Issued for party wall awards
23	10/11/10	SA	TM	Issued for party wall awards
24	10/11/10	SA	TM	Issued for party wall awards
25	10/11/10	SA	TM	Issued for party wall awards
26	10/11/10	SA	TM	Issued for party wall awards
27	10/11/10	SA	TM	Issued for party wall awards
28	10/11/10	SA	TM	Issued for party wall awards
29	10/11/10	SA	TM	Issued for party wall awards
30	10/11/10	SA	TM	Issued for party wall awards

**12-14 GREVILLE STREET
LONDON EC1N 8SB
GROUND FLOOR PLAN**

Status: **STAGE 3 REPORT**
NOT FOR CONSTRUCTION

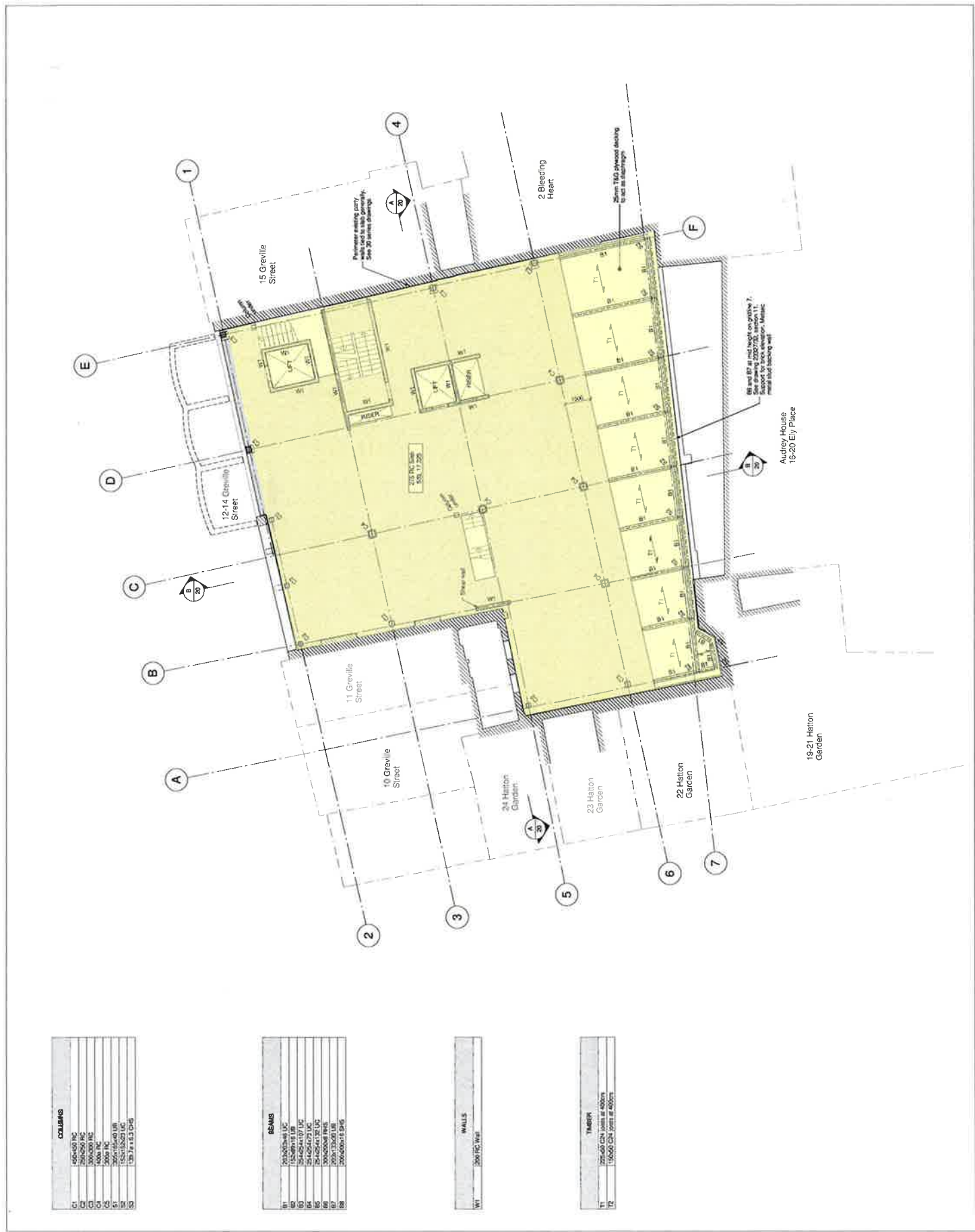
Drawn: Sophie Atip
Eng: Tom Matuzakla

Scales: 1:100

Drawing No: 23327/10
Ver: 2

PRICES&MYERS

Consulting Engineers
207 Abchurch Lane
London EC4A 3DF
Tel: 020 7463 1000
www.pricemys.com



COLUMNS

C1	400x400 RC
C2	300x300 RC
C3	300x300 RC
C4	300x300 RC
C5	300x300 RC
C6	300x300 RC
C7	300x300 RC
C8	300x300 RC
C9	300x300 RC
C10	300x300 RC
C11	300x300 RC
C12	300x300 RC
C13	300x300 RC
C14	300x300 RC
C15	300x300 RC
C16	300x300 RC
C17	300x300 RC
C18	300x300 RC
C19	300x300 RC
C20	300x300 RC
C21	300x300 RC
C22	300x300 RC
C23	300x300 RC
C24	300x300 RC
C25	300x300 RC
C26	300x300 RC
C27	300x300 RC
C28	300x300 RC
C29	300x300 RC
C30	300x300 RC

BEAMS

B1	200x200 RC
B2	200x200 RC
B3	200x200 RC
B4	200x200 RC
B5	200x200 RC
B6	200x200 RC
B7	200x200 RC
B8	200x200 RC
B9	200x200 RC
B10	200x200 RC
B11	200x200 RC
B12	200x200 RC
B13	200x200 RC
B14	200x200 RC
B15	200x200 RC
B16	200x200 RC
B17	200x200 RC
B18	200x200 RC
B19	200x200 RC
B20	200x200 RC
B21	200x200 RC
B22	200x200 RC
B23	200x200 RC
B24	200x200 RC
B25	200x200 RC
B26	200x200 RC
B27	200x200 RC
B28	200x200 RC
B29	200x200 RC
B30	200x200 RC

WALLS

W1	200 RC Wall
----	-------------

THICKEN

T1	200x200 RC Wall
T2	200x200 RC Wall

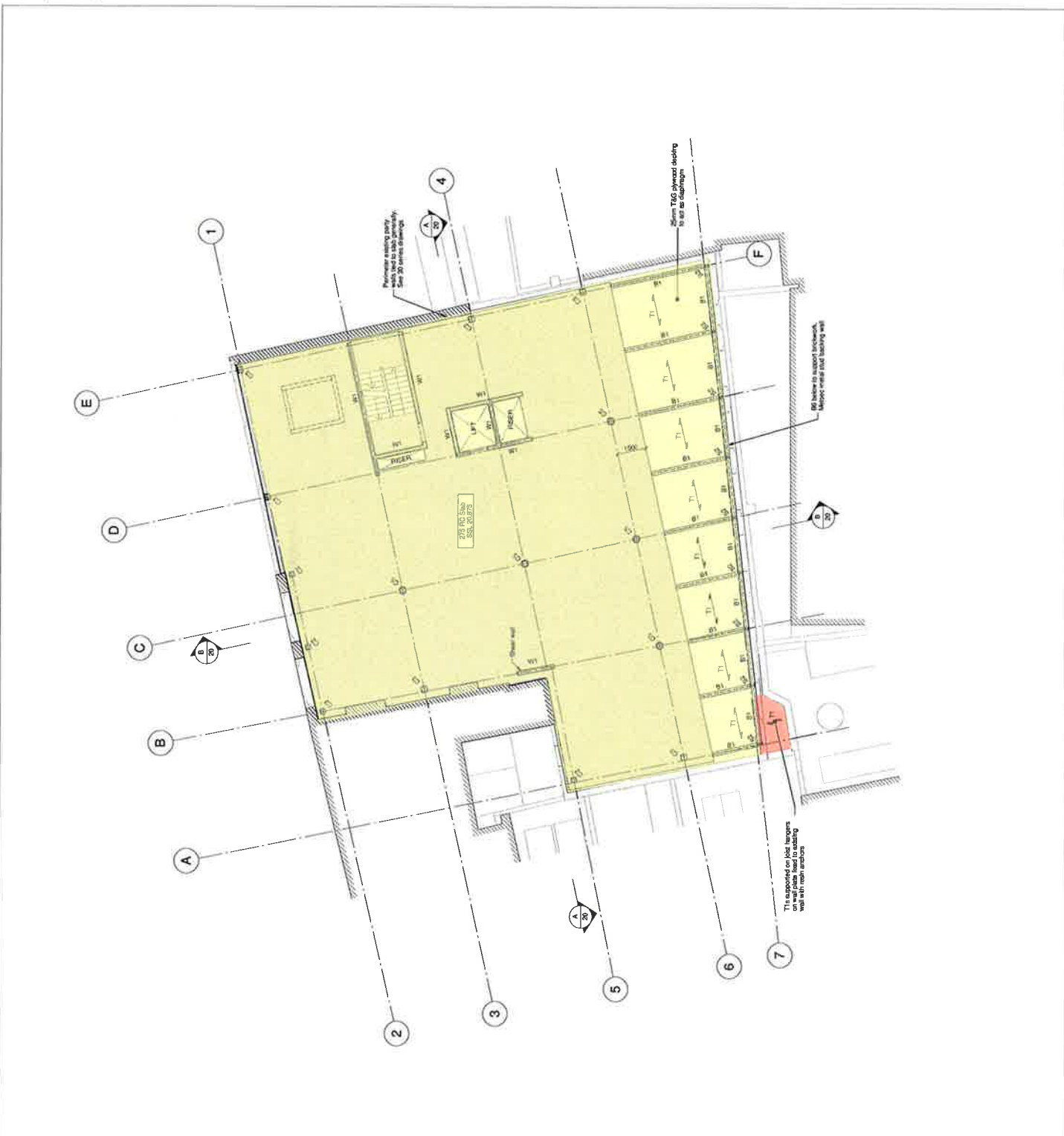
- Notes:**
- The drawing is to be used in production with all relevant Architect's, Engineer's and specialist drawings and specifications.
 - Do not scale from this drawing in either paper or electronic form. All dimensions shall be taken from the drawing. The drawing has been printed to the standard A3 format. The paper shall be 50mm long @A1 or 25mm long @A3.
 - Health & Safety:**
All specific drawing notes are to be read in conjunction with the project 'Information Pack' and 'Site Rules'.
 - For general notes refer to Drawing No. 23927/01.

COLUMNS	
C1	100x400 RC
C2	200x200 RC
C3	200x200 RC
C4	400x400 RC
C5	300x300 RC
C6	200x200 RC
C7	150x150 RC
C8	150x150 RC
C9	150x150 RC
C10	150x150 RC
C11	150x150 RC
C12	150x150 RC
C13	150x150 RC
C14	150x150 RC
C15	150x150 RC
C16	150x150 RC
C17	150x150 RC
C18	150x150 RC
C19	150x150 RC
C20	150x150 RC
C21	150x150 RC
C22	150x150 RC
C23	150x150 RC
C24	150x150 RC
C25	150x150 RC
C26	150x150 RC
C27	150x150 RC
C28	150x150 RC
C29	150x150 RC
C30	150x150 RC
C31	150x150 RC
C32	150x150 RC
C33	150x150 RC
C34	150x150 RC
C35	150x150 RC
C36	150x150 RC
C37	150x150 RC
C38	150x150 RC
C39	150x150 RC
C40	150x150 RC
C41	150x150 RC
C42	150x150 RC
C43	150x150 RC
C44	150x150 RC
C45	150x150 RC
C46	150x150 RC
C47	150x150 RC
C48	150x150 RC
C49	150x150 RC
C50	150x150 RC
C51	150x150 RC
C52	150x150 RC
C53	150x150 RC
C54	150x150 RC
C55	150x150 RC
C56	150x150 RC
C57	150x150 RC
C58	150x150 RC
C59	150x150 RC
C60	150x150 RC
C61	150x150 RC
C62	150x150 RC
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C65	150x150 RC
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C86	150x150 RC
C87	150x150 RC
C88	150x150 RC
C89	150x150 RC
C90	150x150 RC
C91	150x150 RC
C92	150x150 RC
C93	150x150 RC
C94	150x150 RC
C95	150x150 RC
C96	150x150 RC
C97	150x150 RC
C98	150x150 RC
C99	150x150 RC
C100	150x150 RC

BEAMS	
B1	150x200 RC
B2	150x200 RC
B3	150x200 RC
B4	150x200 RC
B5	150x200 RC
B6	150x200 RC
B7	150x200 RC
B8	150x200 RC
B9	150x200 RC
B10	150x200 RC
B11	150x200 RC
B12	150x200 RC
B13	150x200 RC
B14	150x200 RC
B15	150x200 RC
B16	150x200 RC
B17	150x200 RC
B18	150x200 RC
B19	150x200 RC
B20	150x200 RC
B21	150x200 RC
B22	150x200 RC
B23	150x200 RC
B24	150x200 RC
B25	150x200 RC
B26	150x200 RC
B27	150x200 RC
B28	150x200 RC
B29	150x200 RC
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B40	150x200 RC
B41	150x200 RC
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B43	150x200 RC
B44	150x200 RC
B45	150x200 RC
B46	150x200 RC
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B49	150x200 RC
B50	150x200 RC
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B52	150x200 RC
B53	150x200 RC
B54	150x200 RC
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B85	150x200 RC
B86	150x200 RC
B87	150x200 RC
B88	150x200 RC
B89	150x200 RC
B90	150x200 RC
B91	150x200 RC
B92	150x200 RC
B93	150x200 RC
B94	150x200 RC
B95	150x200 RC
B96	150x200 RC
B97	150x200 RC
B98	150x200 RC
B99	150x200 RC
B100	150x200 RC

WALLS	
W1	200 RC Wall

THRESH	
T1	200x400 RC posts at 4000x5
T2	150x400 RC posts at 4000x5



1	12/14	SA	TM	Based for information	RIBA Stage 3
Ver	Date	Drawn	Eng	Amendment	
<p>12-14 GREVILLE STREET LONDON EC1N 8SB FIRST FLOOR PLAN</p>					
<p>STAGE 3 REPORT NOT FOR CONSTRUCTION</p>					
Drawn	Sophia Anup	Eng	Tom Malinowska		
Scales	1:100				
Drawing No	23927/11	Ver	1		

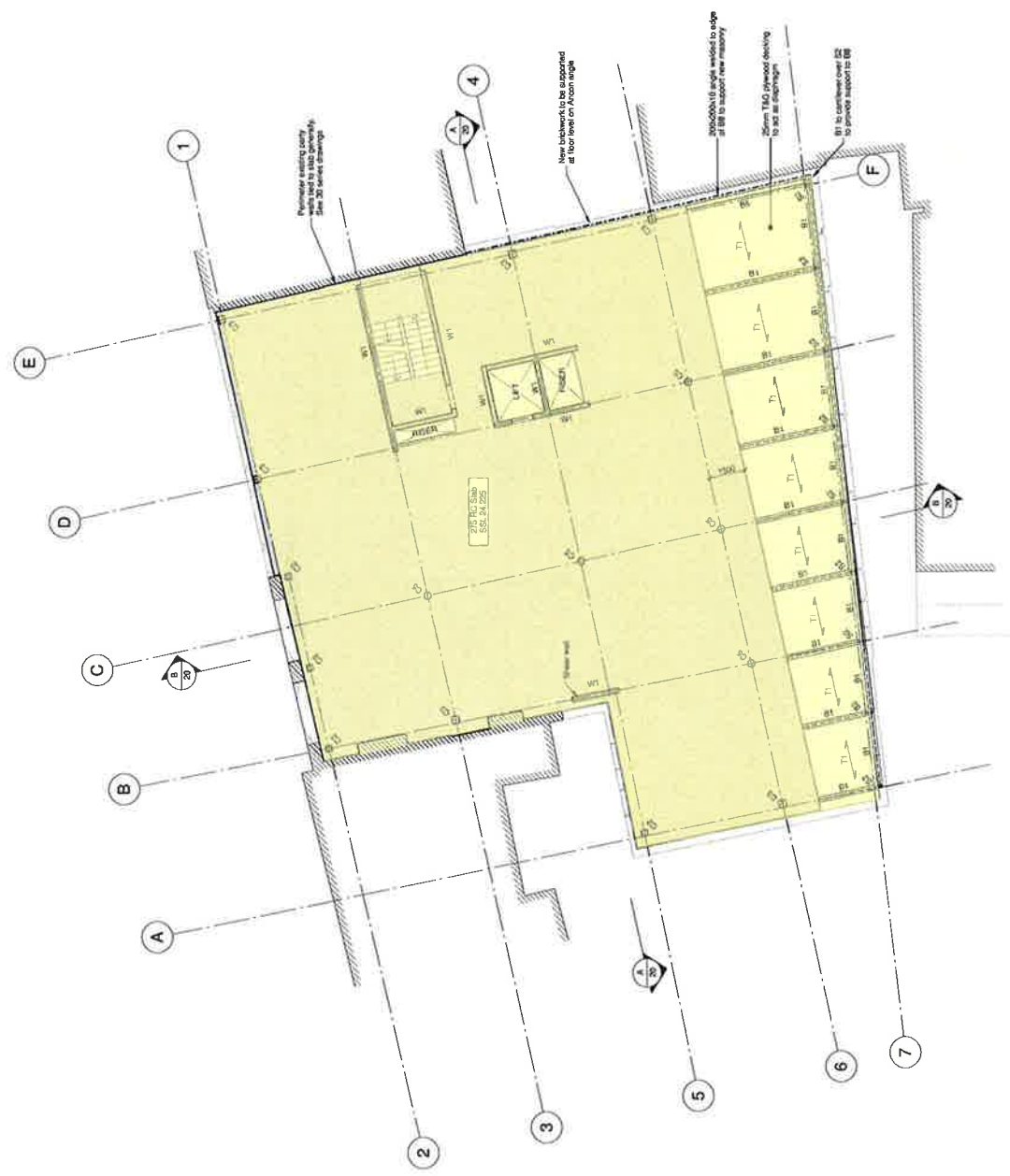
- Notes :-**
- The drawing to be read in conjunction with all drawings and specifications.
 - Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check scale this bar should be 50mm long @ A1 or 25mm long @ A3
 - Scale: 1:100
 - All specific drawing notes are to be read in conjunction with the project "Information Plus" and "Site Rules".
 - For drawing notes refer to Drawing No. 202201.

COLUMNS	
C1	400x400 RC
C2	500x500 RC
C3	600x600 RC
C4	400x400 RC
C5	500x500 RC
C6	600x600 RC
C7	400x400 RC
C8	500x500 RC
C9	600x600 RC
C10	400x400 RC
C11	500x500 RC
C12	600x600 RC
C13	400x400 RC
C14	500x500 RC
C15	600x600 RC
C16	400x400 RC
C17	500x500 RC
C18	600x600 RC

BEAMS	
B1	200x200x40 UC
B2	250x250x45 UC
B3	300x300x55 UC
B4	350x350x65 UC
B5	400x400x75 UC
B6	450x450x85 UC
B7	500x500x95 UC
B8	550x550x105 UC
B9	600x600x115 UC
B10	650x650x125 UC
B11	700x700x135 UC
B12	750x750x145 UC
B13	800x800x155 UC
B14	850x850x165 UC
B15	900x900x175 UC
B16	950x950x185 UC
B17	1000x1000x195 UC
B18	1050x1050x205 UC
B19	1100x1100x215 UC
B20	1150x1150x225 UC
B21	1200x1200x235 UC
B22	1250x1250x245 UC
B23	1300x1300x255 UC
B24	1350x1350x265 UC
B25	1400x1400x275 UC
B26	1450x1450x285 UC
B27	1500x1500x295 UC
B28	1550x1550x305 UC
B29	1600x1600x315 UC
B30	1650x1650x325 UC
B31	1700x1700x335 UC
B32	1750x1750x345 UC
B33	1800x1800x355 UC
B34	1850x1850x365 UC
B35	1900x1900x375 UC
B36	1950x1950x385 UC
B37	2000x2000x395 UC
B38	2050x2050x405 UC
B39	2100x2100x415 UC
B40	2150x2150x425 UC
B41	2200x2200x435 UC
B42	2250x2250x445 UC
B43	2300x2300x455 UC
B44	2350x2350x465 UC
B45	2400x2400x475 UC
B46	2450x2450x485 UC
B47	2500x2500x495 UC
B48	2550x2550x505 UC
B49	2600x2600x515 UC
B50	2650x2650x525 UC
B51	2700x2700x535 UC
B52	2750x2750x545 UC
B53	2800x2800x555 UC
B54	2850x2850x565 UC
B55	2900x2900x575 UC
B56	2950x2950x585 UC
B57	3000x3000x595 UC
B58	3050x3050x605 UC
B59	3100x3100x615 UC
B60	3150x3150x625 UC
B61	3200x3200x635 UC
B62	3250x3250x645 UC
B63	3300x3300x655 UC
B64	3350x3350x665 UC
B65	3400x3400x675 UC
B66	3450x3450x685 UC
B67	3500x3500x695 UC
B68	3550x3550x705 UC
B69	3600x3600x715 UC
B70	3650x3650x725 UC
B71	3700x3700x735 UC
B72	3750x3750x745 UC
B73	3800x3800x755 UC
B74	3850x3850x765 UC
B75	3900x3900x775 UC
B76	3950x3950x785 UC
B77	4000x4000x795 UC
B78	4050x4050x805 UC
B79	4100x4100x815 UC
B80	4150x4150x825 UC
B81	4200x4200x835 UC
B82	4250x4250x845 UC
B83	4300x4300x855 UC
B84	4350x4350x865 UC
B85	4400x4400x875 UC
B86	4450x4450x885 UC
B87	4500x4500x895 UC
B88	4550x4550x905 UC
B89	4600x4600x915 UC
B90	4650x4650x925 UC
B91	4700x4700x935 UC
B92	4750x4750x945 UC
B93	4800x4800x955 UC
B94	4850x4850x965 UC
B95	4900x4900x975 UC
B96	4950x4950x985 UC
B97	5000x5000x995 UC
B98	5050x5050x1005 UC
B99	5100x5100x1015 UC
B100	5150x5150x1025 UC
B101	5200x5200x1035 UC
B102	5250x5250x1045 UC
B103	5300x5300x1055 UC
B104	5350x5350x1065 UC
B105	5400x5400x1075 UC
B106	5450x5450x1085 UC
B107	5500x5500x1095 UC
B108	5550x5550x1105 UC
B109	5600x5600x1115 UC
B110	5650x5650x1125 UC
B111	5700x5700x1135 UC
B112	5750x5750x1145 UC
B113	5800x5800x1155 UC
B114	5850x5850x1165 UC
B115	5900x5900x1175 UC
B116	5950x5950x1185 UC
B117	6000x6000x1195 UC
B118	6050x6050x1205 UC
B119	6100x6100x1215 UC
B120	6150x6150x1225 UC
B121	6200x6200x1235 UC
B122	6250x6250x1245 UC
B123	6300x6300x1255 UC
B124	6350x6350x1265 UC
B125	6400x6400x1275 UC
B126	6450x6450x1285 UC
B127	6500x6500x1295 UC
B128	6550x6550x1305 UC
B129	6600x6600x1315 UC
B130	6650x6650x1325 UC
B131	6700x6700x1335 UC
B132	6750x6750x1345 UC
B133	6800x6800x1355 UC
B134	6850x6850x1365 UC
B135	6900x6900x1375 UC
B136	6950x6950x1385 UC
B137	7000x7000x1395 UC
B138	7050x7050x1405 UC
B139	7100x7100x1415 UC
B140	7150x7150x1425 UC
B141	7200x7200x1435 UC
B142	7250x7250x1445 UC
B143	7300x7300x1455 UC
B144	7350x7350x1465 UC
B145	7400x7400x1475 UC
B146	7450x7450x1485 UC
B147	7500x7500x1495 UC
B148	7550x7550x1505 UC
B149	7600x7600x1515 UC
B150	7650x7650x1525 UC
B151	7700x7700x1535 UC
B152	7750x7750x1545 UC
B153	7800x7800x1555 UC
B154	7850x7850x1565 UC
B155	7900x7900x1575 UC
B156	7950x7950x1585 UC
B157	8000x8000x1595 UC
B158	8050x8050x1605 UC
B159	8100x8100x1615 UC
B160	8150x8150x1625 UC
B161	8200x8200x1635 UC
B162	8250x8250x1645 UC
B163	8300x8300x1655 UC
B164	8350x8350x1665 UC
B165	8400x8400x1675 UC
B166	8450x8450x1685 UC
B167	8500x8500x1695 UC
B168	8550x8550x1705 UC
B169	8600x8600x1715 UC
B170	8650x8650x1725 UC
B171	8700x8700x1735 UC
B172	8750x8750x1745 UC
B173	8800x8800x1755 UC
B174	8850x8850x1765 UC
B175	8900x8900x1775 UC
B176	8950x8950x1785 UC
B177	9000x9000x1795 UC
B178	9050x9050x1805 UC
B179	9100x9100x1815 UC
B180	9150x9150x1825 UC
B181	9200x9200x1835 UC
B182	9250x9250x1845 UC
B183	9300x9300x1855 UC
B184	9350x9350x1865 UC
B185	9400x9400x1875 UC
B186	9450x9450x1885 UC
B187	9500x9500x1895 UC
B188	9550x9550x1905 UC
B189	9600x9600x1915 UC
B190	9650x9650x1925 UC
B191	9700x9700x1935 UC
B192	9750x9750x1945 UC
B193	9800x9800x1955 UC
B194	9850x9850x1965 UC
B195	9900x9900x1975 UC
B196	9950x9950x1985 UC
B197	10000x10000x1995 UC

WALLS	
W1	200 HC Wall

TIMBER	
T1	20x40 CH Joist @ 400mm
T2	150x60 CH Joist @ 400mm



No	Date	Drawn	Eng	Approved
1	12.11.18	SA	TUN	Issued for Information, RIBA Stage 3

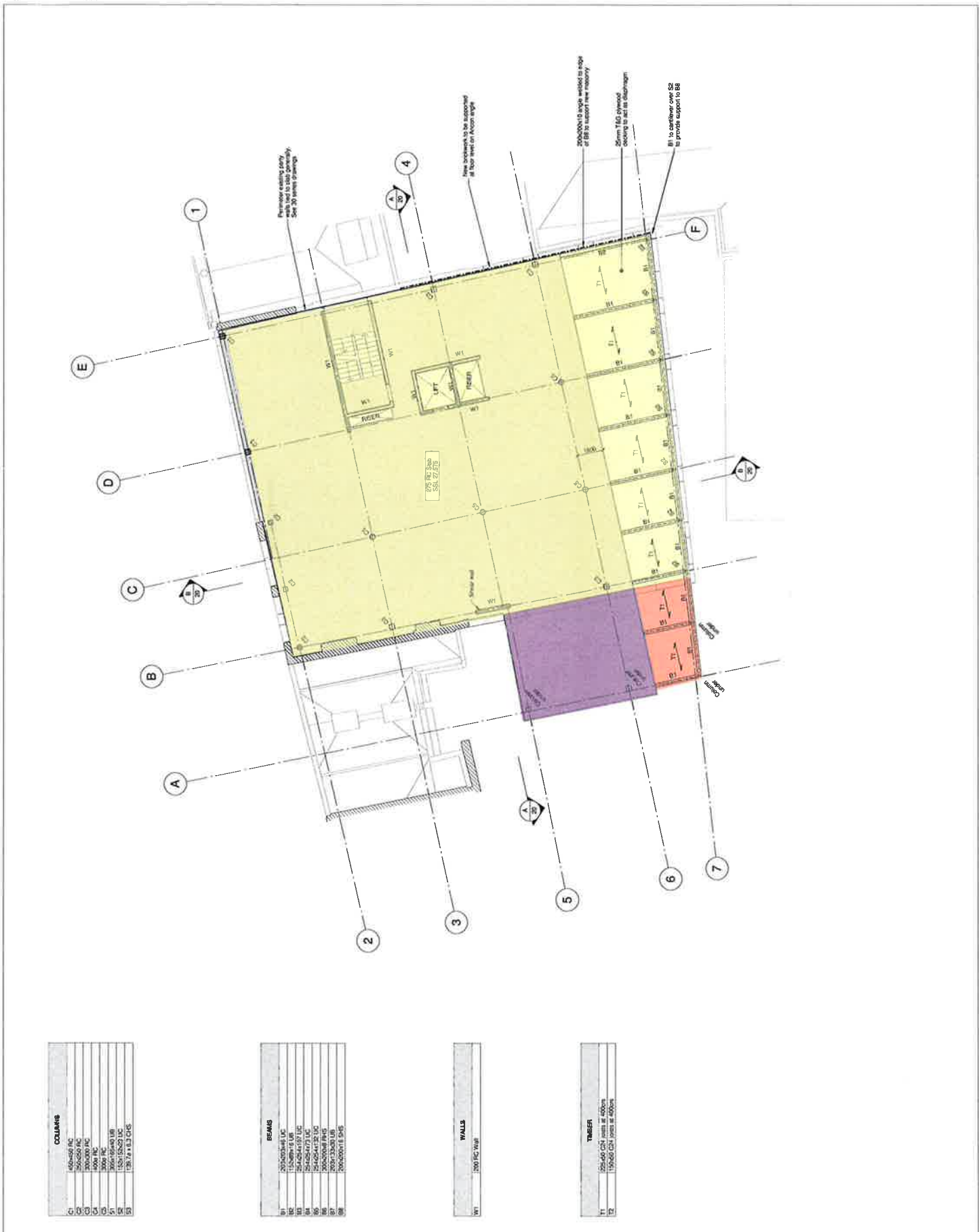
**12-14 GREVILLE STREET
LONDON EC1N 8SB**

SECOND FLOOR PLAN

Sheet: **STAGE 3 REPORT**
NOT FOR CONSTRUCTION

Drawn	Sophie Anup	Eng	Tom Matsuzaka
Scale	1:100		
Drawing No	233327/12	Ver	1

- Notes**
- This drawing is to read in conjunction with all relevant Architect, Engineer and specialist drawings and specifications.
 - Do not scale from this drawing in either paper or electronic form. It is the responsibility of the user that the drawing has been printed to the intended scale. For more information on this, please refer to the 'Site Rules'.
 - Health & Safety:** A copy of the Health & Safety Plan for this project should be issued to all personnel on site. For more information on this, please refer to the 'Site Rules'.
 - For general notes refer to Drawing No. 23327/01.



COLUMNS	
C1	400x400 RC
C2	500x500 RC
C3	300x300 RC
C4	300x300 RC
C5	300x300 RC
C6	300x300 RC
C7	300x300 RC
C8	300x300 RC
C9	300x300 RC
C10	300x300 RC
C11	300x300 RC
C12	300x300 RC
C13	300x300 RC
C14	300x300 RC
C15	300x300 RC
C16	300x300 RC
C17	300x300 RC
C18	300x300 RC
C19	300x300 RC
C20	300x300 RC
C21	300x300 RC
C22	300x300 RC
C23	300x300 RC
C24	300x300 RC
C25	300x300 RC
C26	300x300 RC
C27	300x300 RC
C28	300x300 RC
C29	300x300 RC
C30	300x300 RC
C31	300x300 RC
C32	300x300 RC
C33	300x300 RC
C34	300x300 RC
C35	300x300 RC
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C37	300x300 RC
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C83	300x300 RC
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C87	300x300 RC
C88	300x300 RC
C89	300x300 RC
C90	300x300 RC
C91	300x300 RC
C92	300x300 RC
C93	300x300 RC
C94	300x300 RC
C95	300x300 RC
C96	300x300 RC
C97	300x300 RC
C98	300x300 RC
C99	300x300 RC
C100	300x300 RC

BEAMS	
B1	200x200x40 LUC
B2	200x200x40 LUC
B3	200x200x40 LUC
B4	200x200x40 LUC
B5	200x200x40 LUC
B6	200x200x40 LUC
B7	200x200x40 LUC
B8	200x200x40 LUC
B9	200x200x40 LUC
B10	200x200x40 LUC
B11	200x200x40 LUC
B12	200x200x40 LUC
B13	200x200x40 LUC
B14	200x200x40 LUC
B15	200x200x40 LUC
B16	200x200x40 LUC
B17	200x200x40 LUC
B18	200x200x40 LUC
B19	200x200x40 LUC
B20	200x200x40 LUC
B21	200x200x40 LUC
B22	200x200x40 LUC
B23	200x200x40 LUC
B24	200x200x40 LUC
B25	200x200x40 LUC
B26	200x200x40 LUC
B27	200x200x40 LUC
B28	200x200x40 LUC
B29	200x200x40 LUC
B30	200x200x40 LUC
B31	200x200x40 LUC
B32	200x200x40 LUC
B33	200x200x40 LUC
B34	200x200x40 LUC
B35	200x200x40 LUC
B36	200x200x40 LUC
B37	200x200x40 LUC
B38	200x200x40 LUC
B39	200x200x40 LUC
B40	200x200x40 LUC
B41	200x200x40 LUC
B42	200x200x40 LUC
B43	200x200x40 LUC
B44	200x200x40 LUC
B45	200x200x40 LUC
B46	200x200x40 LUC
B47	200x200x40 LUC
B48	200x200x40 LUC
B49	200x200x40 LUC
B50	200x200x40 LUC
B51	200x200x40 LUC
B52	200x200x40 LUC
B53	200x200x40 LUC
B54	200x200x40 LUC
B55	200x200x40 LUC
B56	200x200x40 LUC
B57	200x200x40 LUC
B58	200x200x40 LUC
B59	200x200x40 LUC
B60	200x200x40 LUC
B61	200x200x40 LUC
B62	200x200x40 LUC
B63	200x200x40 LUC
B64	200x200x40 LUC
B65	200x200x40 LUC
B66	200x200x40 LUC
B67	200x200x40 LUC
B68	200x200x40 LUC
B69	200x200x40 LUC
B70	200x200x40 LUC
B71	200x200x40 LUC
B72	200x200x40 LUC
B73	200x200x40 LUC
B74	200x200x40 LUC
B75	200x200x40 LUC
B76	200x200x40 LUC
B77	200x200x40 LUC
B78	200x200x40 LUC
B79	200x200x40 LUC
B80	200x200x40 LUC
B81	200x200x40 LUC
B82	200x200x40 LUC
B83	200x200x40 LUC
B84	200x200x40 LUC
B85	200x200x40 LUC
B86	200x200x40 LUC
B87	200x200x40 LUC
B88	200x200x40 LUC
B89	200x200x40 LUC
B90	200x200x40 LUC
B91	200x200x40 LUC
B92	200x200x40 LUC
B93	200x200x40 LUC
B94	200x200x40 LUC
B95	200x200x40 LUC
B96	200x200x40 LUC
B97	200x200x40 LUC
B98	200x200x40 LUC
B99	200x200x40 LUC
B100	200x200x40 LUC

WALLS	
W1	200 RC Wall

TIMBER	
T1	200x200x40 LUC
T2	200x200x40 LUC

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

**12-14 GREVILLE STREET
LONDON EC1N 8SB
THIRD FLOOR PLAN**

Status **STAGE 3 REPORT**
NOT FOR CONSTRUCTION

Drawn	Sophie Anup	Eng	Tom Hatzizola
Scale	1:100		
Drawing No	23327/13		
Ver	1		

PRICE & MYERS
Consulting Engineers
27 Alfred Place London WC1E 7DP
Tel: 020 7625 1234
www.priceandmyers.com

NOTES:-

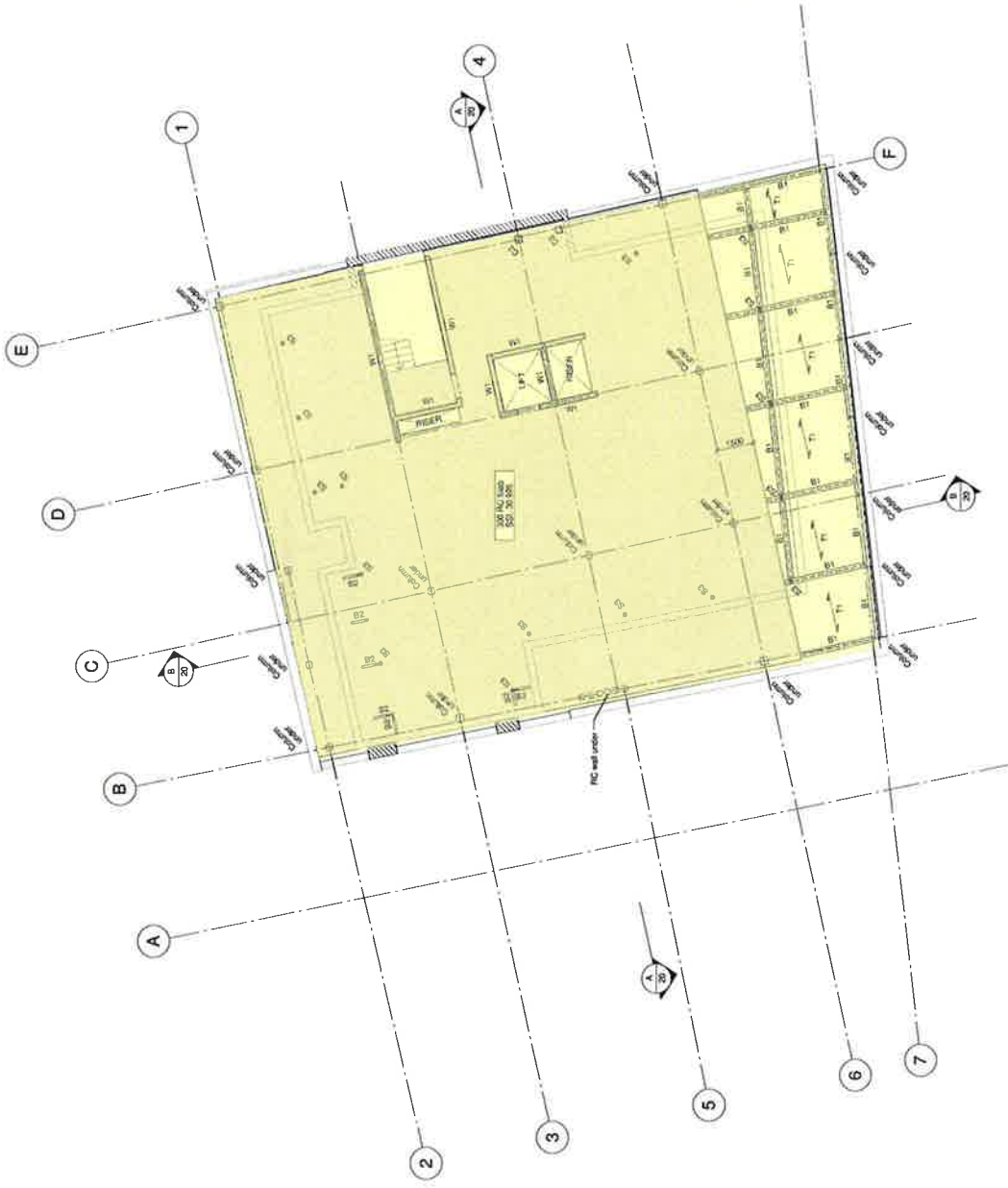
1. This drawing is to be read in conjunction with all relevant Architect's, Engineer's, and specialist's drawings and specifications.
2. Do not scale from the drawing in other than the units shown. All dimensions are in millimetres. All dimensions are to be rounded up to the next millimetre. All dimensions are to be rounded up to the next millimetre. All dimensions are to be rounded up to the next millimetre. All dimensions are to be rounded up to the next millimetre.
3. **Health & Safety:** All work to be carried out in accordance with the relevant HSE regulations and the 'Safe Sites'.
4. For general notes refer to Drawing No. 23327/01.

COLUMNS	
C1	400x400 RC
C2	300x300 RC
C3	300x300 RC
C4	300x300 RC
C5	300x300 RC
C6	300x300 RC
C7	300x300 RC
C8	300x300 RC
C9	300x300 RC
C10	300x300 RC

BEAMS	
B1	200x200 RC
B2	200x200 RC
B3	200x200 RC
B4	200x200 RC
B5	200x200 RC
B6	200x200 RC
B7	200x200 RC
B8	200x200 RC
B9	200x200 RC
B10	200x200 RC

WALLS	
W1	200 RC Wall

TRISER	
T1	200x200 RC
T2	200x200 RC



No.	Date	Drawn	Checked	By	Description
1	12/01/14	SA	TM	TM	Issued for Information: RIBA Stage 2
2					
3					
4					

**12-14 GREVILLE STREET
LONDON EC1N 8SB
FOURTH FLOOR PLAN**

Status: **STAGE 3 REPORT**
NOT FOR CONSTRUCTION

Drawn	Sophia Anip	Eng	Tom Matuzak
Scales	1:100		
Drawing No	23327/14		
Ver	1		

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11

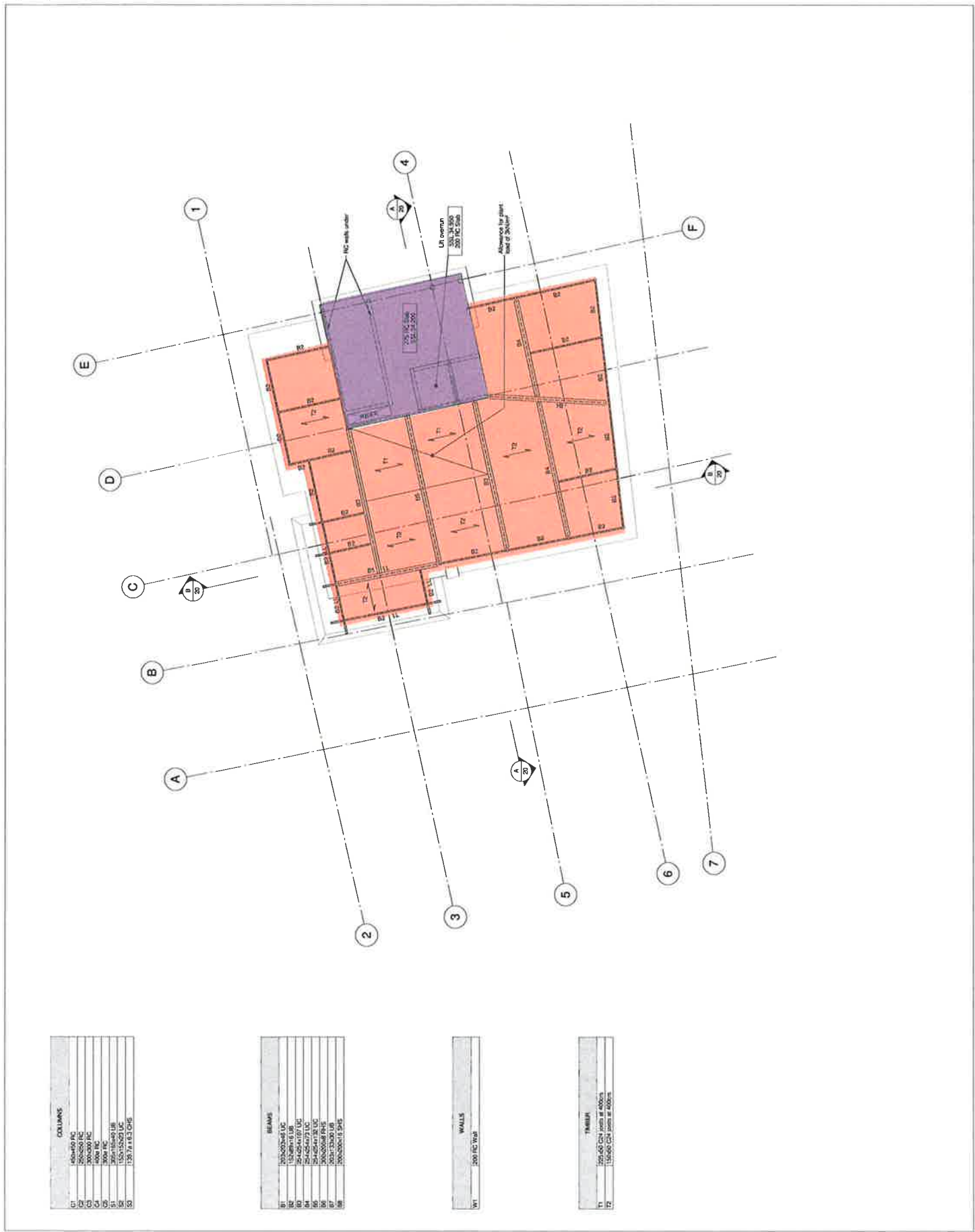
- Notes :-**
- The drawing is to read in conjunction with all relevant Architect, Engineer's and specialist drawings and specifications.
 - Do not read from this drawing in either paper or electronic form unless you are sure that the drawing has been printed to the intended scale. For details refer to the relevant drawing or specification.
 - Health & Safety :-
All specific drawing notes are to be read in conjunction with the Project Information Pack and 'Site Rules'.
 - For general notes refer to Drawing No. 23327/01.

1	Rev	SA	TM	Issued for Information, NBS Stage 3
2	Rev	SA	TM	Issued for Information, NBS Stage 3

**12-14 GREVILLE STREET
LONDON EC1N 8SB
ROOF PLAN**

**STAGE 3 REPORT
NOT FOR CONSTRUCTION**

Drawn	Sophia Arup	Exp.	Tom Maturzaka
Scale	1:100	Ver	
Drawing No	23327/15	1	



COLUMNS

C1	400x400 RC
C2	500x500 RC
C3	500x500 RC
C4	500x500 RC
C5	500x500 RC
C6	500x500 RC
C7	500x500 RC
C8	500x500 RC
C9	500x500 RC
C10	500x500 RC
C11	500x500 RC
C12	500x500 RC
C13	500x500 RC
C14	500x500 RC
C15	500x500 RC
C16	500x500 RC
C17	500x500 RC
C18	500x500 RC
C19	500x500 RC
C20	500x500 RC
C21	500x500 RC
C22	500x500 RC
C23	500x500 RC
C24	500x500 RC
C25	500x500 RC
C26	500x500 RC
C27	500x500 RC
C28	500x500 RC
C29	500x500 RC
C30	500x500 RC
C31	500x500 RC
C32	500x500 RC
C33	500x500 RC
C34	500x500 RC
C35	500x500 RC
C36	500x500 RC
C37	500x500 RC
C38	500x500 RC
C39	500x500 RC
C40	500x500 RC
C41	500x500 RC
C42	500x500 RC
C43	500x500 RC
C44	500x500 RC
C45	500x500 RC
C46	500x500 RC
C47	500x500 RC
C48	500x500 RC
C49	500x500 RC
C50	500x500 RC

BEAMS

B1	200x200x10 RC
B2	200x200x10 RC
B3	200x200x10 RC
B4	200x200x10 RC
B5	200x200x10 RC
B6	200x200x10 RC
B7	200x200x10 RC
B8	200x200x10 RC
B9	200x200x10 RC
B10	200x200x10 RC
B11	200x200x10 RC
B12	200x200x10 RC
B13	200x200x10 RC
B14	200x200x10 RC
B15	200x200x10 RC
B16	200x200x10 RC
B17	200x200x10 RC
B18	200x200x10 RC
B19	200x200x10 RC
B20	200x200x10 RC
B21	200x200x10 RC
B22	200x200x10 RC
B23	200x200x10 RC
B24	200x200x10 RC
B25	200x200x10 RC
B26	200x200x10 RC
B27	200x200x10 RC
B28	200x200x10 RC
B29	200x200x10 RC
B30	200x200x10 RC
B31	200x200x10 RC
B32	200x200x10 RC
B33	200x200x10 RC
B34	200x200x10 RC
B35	200x200x10 RC
B36	200x200x10 RC
B37	200x200x10 RC
B38	200x200x10 RC
B39	200x200x10 RC
B40	200x200x10 RC
B41	200x200x10 RC
B42	200x200x10 RC
B43	200x200x10 RC
B44	200x200x10 RC
B45	200x200x10 RC
B46	200x200x10 RC
B47	200x200x10 RC
B48	200x200x10 RC
B49	200x200x10 RC
B50	200x200x10 RC

WALLS

W1	200 RC Wall
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FABRICATION

F1	200 RC Wall
F2	200 RC Wall
F3	200 RC Wall
F4	200 RC Wall
F5	200 RC Wall
F6	200 RC Wall
F7	200 RC Wall
F8	200 RC Wall
F9	200 RC Wall
F10	200 RC Wall
F11	200 RC Wall
F12	200 RC Wall
F13	200 RC Wall
F14	200 RC Wall
F15	200 RC Wall
F16	200 RC Wall
F17	200 RC Wall
F18	200 RC Wall
F19	200 RC Wall
F20	200 RC Wall
F21	200 RC Wall
F22	200 RC Wall
F23	200 RC Wall
F24	200 RC Wall
F25	200 RC Wall
F26	200 RC Wall
F27	200 RC Wall
F28	200 RC Wall
F29	200 RC Wall
F30	200 RC Wall
F31	200 RC Wall
F32	200 RC Wall
F33	200 RC Wall
F34	200 RC Wall
F35	200 RC Wall
F36	200 RC Wall
F37	200 RC Wall
F38	200 RC Wall
F39	200 RC Wall
F40	200 RC Wall
F41	200 RC Wall
F42	200 RC Wall
F43	200 RC Wall
F44	200 RC Wall
F45	200 RC Wall
F46	200 RC Wall
F47	200 RC Wall
F48	200 RC Wall
F49	200 RC Wall
F50	200 RC Wall