16 Appendix

Appendix

16.1 Appendix A

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Courtyard Gardens sketchbook #1

33 Ely Place
Holborn, London

220324

= people + nature

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introduction

Phil Allen DESIGN

introduction to Phil Allen Design

We a Chartered Landscape Architecture studio underpinned by 25 years of professional experience. We provide a complete design service specialising throughout the UK.

Our services include

- Landscape Architecture
- Public Realm
- Vertical Gardens
- Garden Design

We have a reputation for delivering high-quality designs at a wide range of scales for the residential, hospitality and commercial market sectors.

We believe our great passion for nature has created some truly distinctive work, which forms an asset to the development, community and environment. Our work aims to be striking, enduring and sustainable.

We pride ourselves in working closely with our clients and teams and take an individual approach to each and every project.

We look forward to working with you.

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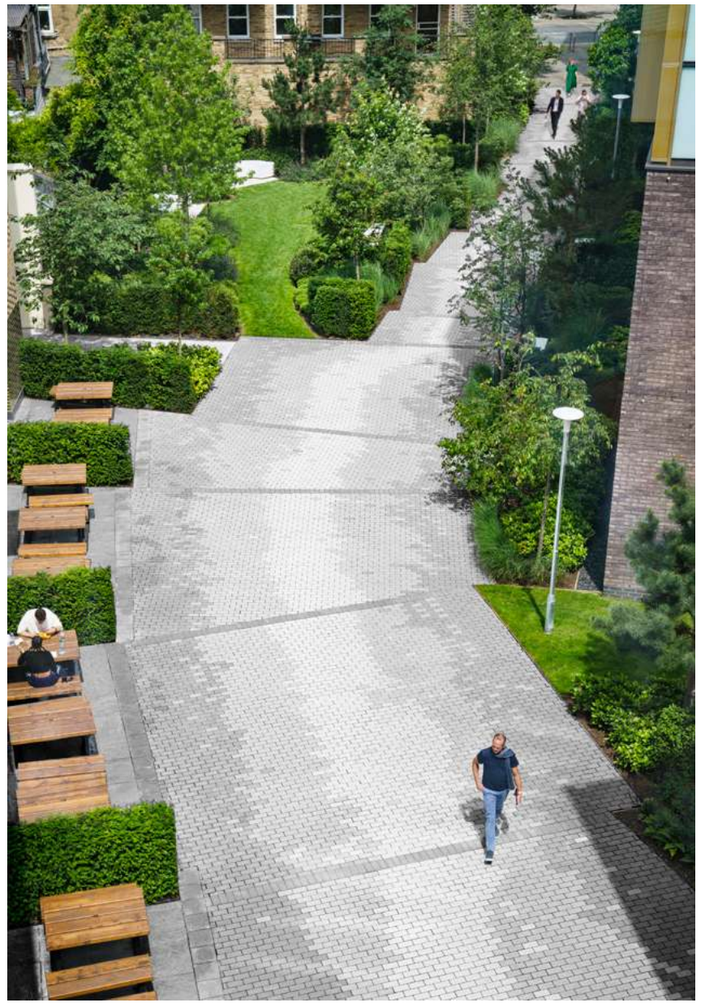
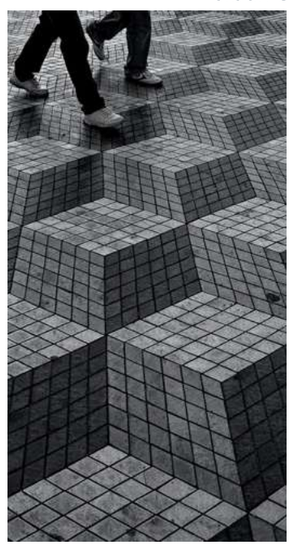
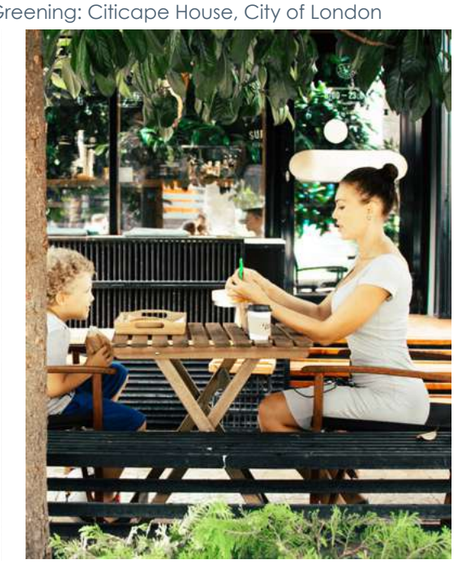


Public Realm: New Marlborough Yard, Southwark

Urban Greening: Citicape House, City of London

Roof Gardens: Treehouse Hotel, Regent Street





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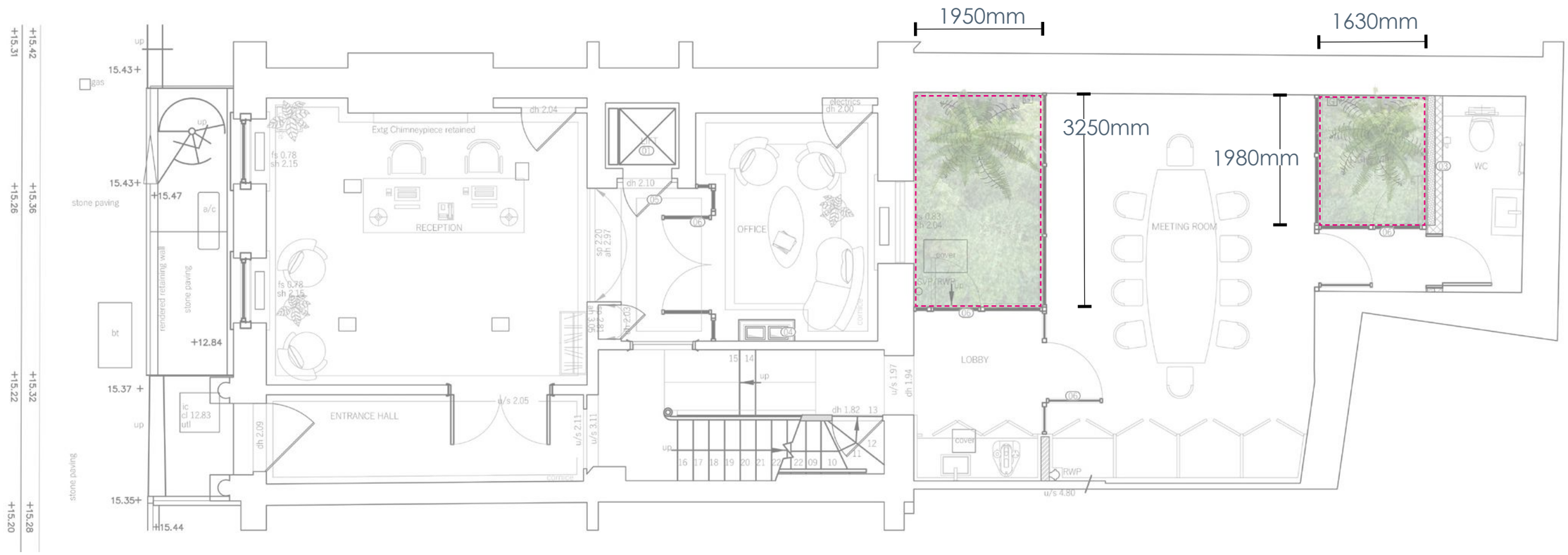
ground floor plan

There is an opportunity to introduce modest planting within two new courtyards that are being created as part of the refurbishment to the building.

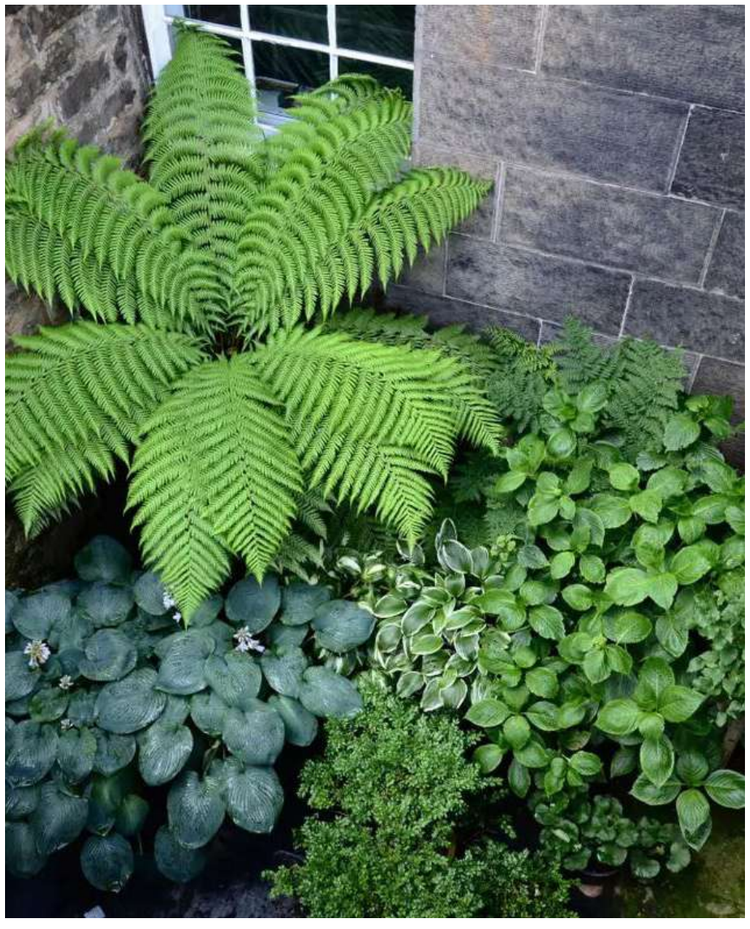
The site is also located within the Hatton Garden Conservation Area, making it an area of significant heritage.

The proposed planting will be small scale in nature and, importantly, designed carefully to ensure roots do not damage the listed building.



courtyard inspiration

Given the scale and proportions of the two courtyards, there is little direct sunlight that penetrates the ground plane. Therefore shade-loving understorey plants such as tree fern, hostas, ferns and foxglove are suitable species, and will provide texture, seasonaity and greenery to the internal working environment.



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impression of courtyard 1

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indicative shade-loving planting

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impression of courtyard 2

technical

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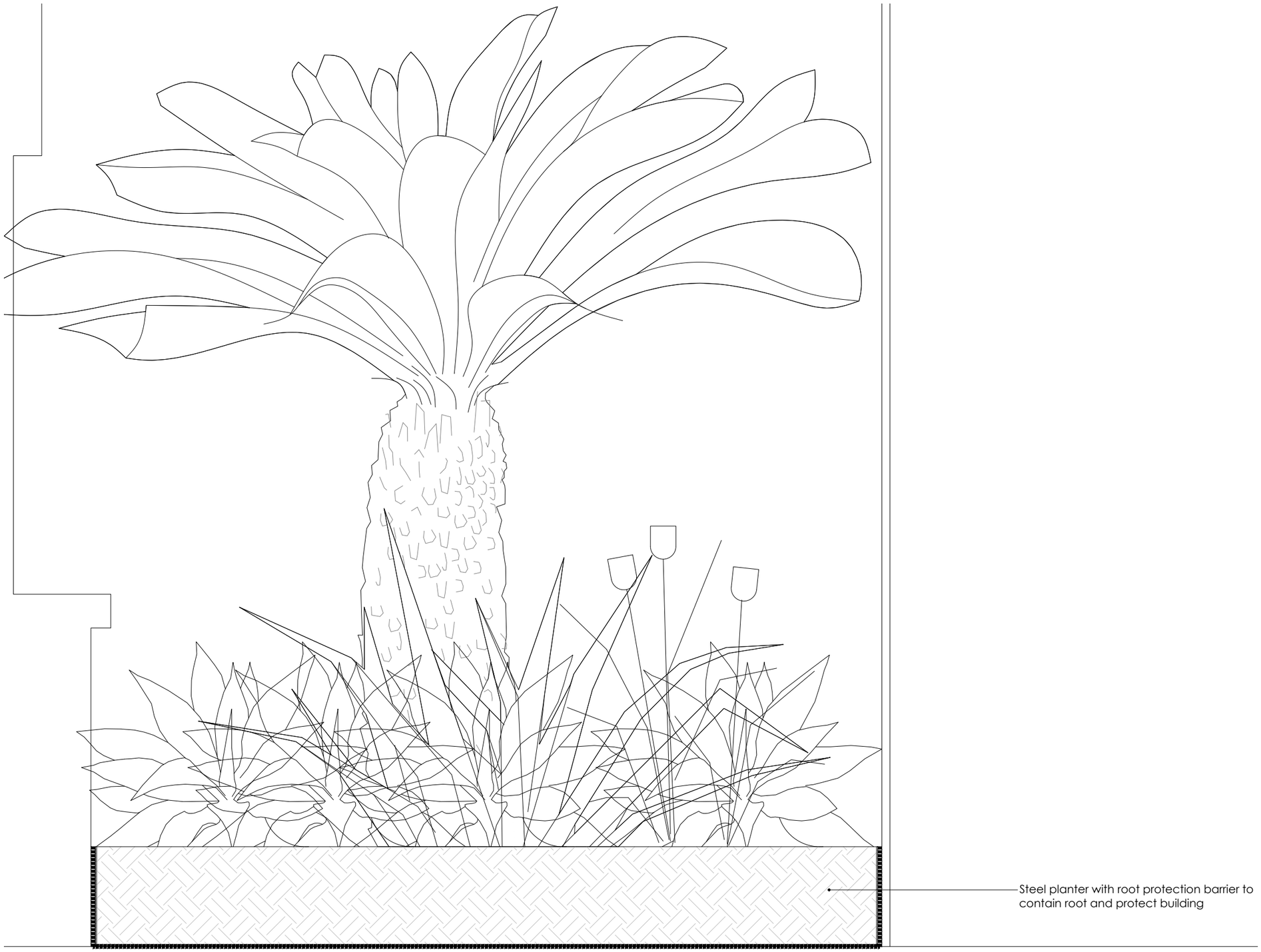
typical section through steel planter within courtyard



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Appendix

16.2 Appendix B

Damion Marcus Burrows Architects

TPS.
TAYLOR PROJECT SERVICES LLP
BUILDING SERVICES CONSULTANTS

33 Ely Place, London EC1N 6TD

April 2022– Revision B
Updated to Architect's Planning Information

M&E DRAFT Stage 2 Design Report

33 Ely Place – Design Criteria

Design Standards

The M&E services proposed have been assessed on the following basis to obtain the conditions specified.

External Conditions

- Winter -4°C/saturated
- Summer 30°C db/19°Cwb

External heat rejection plant (VRF condensers) to be selected against 32°C ambient conditions to allow for plant enclosure effects.

Internal Conditions

Offices:-

- Winter 20°C ± 2°C
- Summer 22°C ± 2°C under peak conditions
- Circulation Areas 18°C (heated only)
- Toilet Areas 18°C (heated only)

Occupancy

The occupancy density for calculations of thermal loads shall be based upon one person per 8m². Heat output per person shall be assumed as being 90 Watts (sensible) and 50 Watts (latent) during summer peak.

Occupancy for public health and lift provisions shall be based on one person per 8m².

Mechanical Fresh Air

Fresh air allowance of 12 l/s per person shall be provided for office areas at 1 person per 8m² with 10% diversity allowance in distribution systems for meeting room areas etc.

Lighting Heat Gain

The design of the air-conditioning system shall allow for a heat gain, due to artificial lighting, of 8 W/m².

Small Power

The design of the air-conditioning system shall allow for heat gain, due to small office equipment of 25W/m².

Infiltration

Allowances for heat gains and losses due to natural air infiltration shall be based on the following air change rate:-

- Summer 0.5 air changes per hour
- Winter 1.00 air change per hour

The infiltration rate will need to be reviewed against the building air permeability target of 3.5m³/h.m².

Noise Criterion

The mechanical services shall be designed and equipment selected to achieve a noise rating not exceeding the following:-

- General Open Plan Office NR 38
- Toilet NR 45
- Lift Lobbies/corridors NR 40
- External site boundary Subject to survey of existing levels.

Electrical Services

Lighting

The scheme is to be compliant with Building Regulations and BCO Guidelines 2019 as indicated below;

- Minimum ceiling illuminance >100 lux; Wall illuminance <150 lux
- Working Plane @ 0.75m AFFL
- Mean Cylindrical Illuminance >150lux @ 1.2m and 1.6m AFFL
- Modelling Ration 0.3 – 0.6 @1.2m and 1.6 AFFL
- Ra 80 minimum

	Lux Level	Uniformity	Glare
Open Plan Offices	300-500 lux	0.7 minimum	<19
Plant Area	200 lux at floor level	0.7 minimum	
Corridors / Lobby / Staircase	100 lux at floor level	0.4 minimum	<25
Toilets	200 lux minimum	0.4 minimum	<25
Shower	200 lux minimum	0.4 minimum	<25
Reception Desk	200 lux at desk, 300 lux on surfaces lower than desk level	0.7 minimum	<21
Reception Atrium	100 lux at floor level	0.4 minimum	<21
Bin Store / Cycle	200 lux at floor level	0.4 minimum	<25
Cleaners	100 lux at floor level	0.4 minimum	<25
Storage	200 lux	0.4 minimum	<25

Power

- Small Power Tenants 25 W/m²
- Lighting Tenants 8 W/m²

Note: Power Requirements are based upon BSRIA Guidance figures.

Emergency Lighting

1 lux along defined escape routes In accordance with BS 5266

Fire Alarms

Protection of life BS5839-1 Type L1 system within the building.

33 Ely Place – Design Criteria

Mechanical Systems Selection matrix.

AIR CONDITIONING SYSTEM COMPARISON TABLE MATRIX

No	Factor	Priority Weighting	4 - Pipe Fan Coil Heat Recovery Ventilation		Underfloor Fan Tile Heat Recovery Ventilation		3 Pipe VRF System Heat Recovery Ventilation		Chilled Beam System Heat Recovery Ventilation		VAV System Heat Recovery Ventilation	
			Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
1	Market Perception	8	5	40	3	24	4	32	1	8	2	16
2	Capital Installation Cost	8	3	24	3	24	5	40	2	16	1	8
3	Riser/Plant Space Utilisation	8	3	24	2	16	5	40	3	24	1	8
4	Floor To Floor height Utilisation	7	3	21	5	35	4	28	3	21	1	7
5	Environmental Perception	8	3	24	3	24	5	40	4	32	1	8
6	Energy Efficiency / BREEAM	8	3	24	3	24	5	40	4	32	1	8
7	Integration with Structure	6	3	18	5	30	4	24	2	12	1	6
8	Ease of Cellularisation	6	5	30	3	18	3	18	2	12	4	24
9	Occupant Comfort	9	4	36	2	18	3	27	3	27	4	36
10	Space Control Flexibility/Response	8	4	32	3	24	3	24	2	16	5	40
11	Acoustic Performance	5	3	15	2	10	3	15	5	25	3	15
12	Service Life	9	5	45	4	36	3	27	5	45	5	45
13	Maintenance	9	3	27	4	36	3	27	5	45	4	36
14	High Load Capability	4	4	16	3	12	5	20	2	8	5	20
15	Cost In Use	5	2	10	2	10	3	15	5	25	1	5
	Cumulative Score			386		341		417		348		282

33 Ely Place – VRF System 3-Pipe (Heat Recovery)

Split and Heat Pump (DX) systems are generally perceived to be a quick fix solution for small applications and are considered to be noisy and unreliable in operation. The Size of systems and controllability can be limited and split systems are generally considered to be of lower quality to more traditional systems such as fan coils.

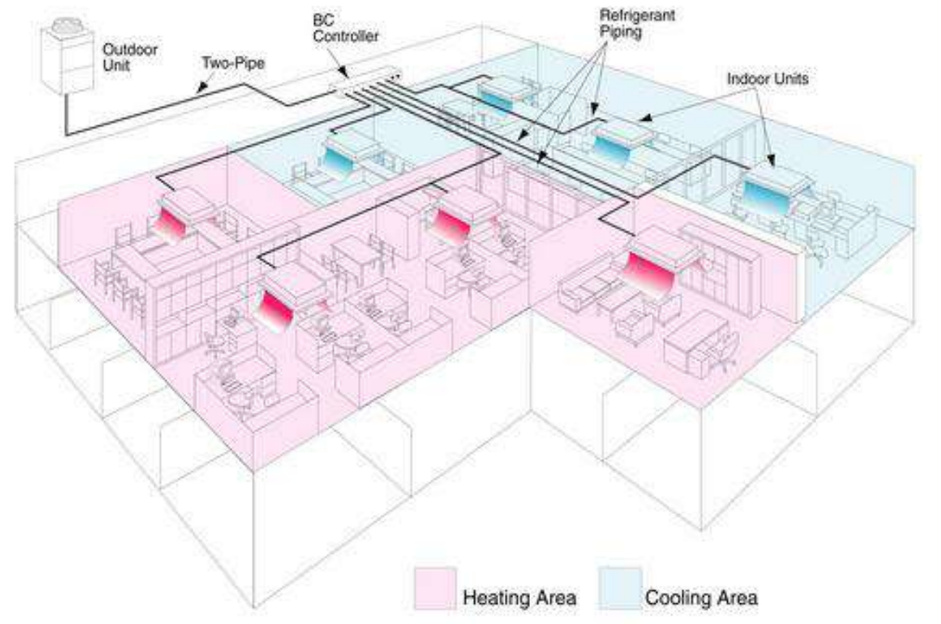
However the latest systems have increase reliability, offer extended warranties of up to 7 years and have good controls. The systems are modular and flexible in capacity ranges which can be combined providing higher cooling loads commensurate with small through to large building applications.

Components are readily available and standard in manufacture which can be procured quickly and simply installed. However parts and components are available for around 10 years therefore the service life of the system is typically 15 years.

3-Pipe Heat Recovery Systems differ from 2-Pipe Heat Pump Systems as they have additional Heat Recovery Controllers that mean that each indoor terminal unit can individually heat or cool. 2- Pipe Heat Pumps only heat or cool as a system and are not as flexible.

Typical Application :	Speculative Urban / City Office Development
Principle Of Operation :	Refrigeration - Heat Pump cycle.
Installation Cost:	180 – 190 £/m^2
Cooling Capacity:	100 – 150W/m^2
Noise Rating NR:	NR38 – NR45
Room Air Movement:	8 – 10 Air Changes
Room Control Temperature:	22 – 24 ºC
Energy Consumption:	215 – 235kWh/m^2
Market Perception	Good (improving as technology develops)
Capital Installation Cost	Very Good - £180 - £190/m^2
Riser/Plant Space Utilisation	Excellent (small risers and small modular plant)
Floor To Floor height Utilisation	Very Good
Environmental Perception	Excellent (Heat Pumps are classed as renewables)
Energy Efficiency / BREEAM	Very Good
Integration with Structure	Very Good
Ease of Cellularisation	Very Good
Occupant Comfort	Good (Ducted Units) / Poor (Cassette Units)
Space Control Flexibility/Response	Very Good
Acoustic Performance	Good (Ducted Units) / Poor (Cassette Units)
Service Life	Good – 12-15 Years
Maintenance	Good
High Load Capability	Good
Cost In Use	Very Good (plant is easily demised and metered)

- Low Capital Cost
- Low Energy
- Low Services Voids
- Low Plant Requirements
- Short Service Life
- Condensation Risk



33 Ely Place

Design Load Assessments – Mechanical Services

Floor	Main Building					Mechanical										Condenser		
	Gross	Net	Occupancy	Occupancy		Heating	Cooling	Fresh Air	Floor	Riser	Riser	Fresh Air	Floor	Riser	Riser	Cooling Load	Dims	Ref
	Area m^2	Area m^2	1 Person/6m2	1 Person/8m2		kW	kW	l/s (8)	Duct Size	m^3/s (8)	Duct Size	m^3/s(10)	Duct Size	m^3/s (10)	Duct Size	kW	H x W x D	-
Basement		47	6	8		3.29	5.64	70.5	200 x 150	70.5	200 x 150	94	200 x 150	94	200 x 150			
Ground Floor		82	10	14		5.74	9.84	123	200 x 150	193.5	350 x 200	164	300 x 150	258	400 x 250			
First Floor		82	10	14		5.74	9.84	123	200 x 150	316.5	350 x 200	164	300 x 150	422	400 x 250	45.36	1685 x 1240 x 765	REYQ18T
Second Floor		83	10	14		5.81	9.96	124.5	200 x 150	441	500 x 250	166	300 x 150	588	700 x 250			
Third Floor		84	11	14		5.88	10.08	126	200 x 150	567	500 x 250	168	300 x 150	756	700 x 250			
		378	47	63		26	45	567				756						

33 Ely Place

Design Load Assessments – Electrical Services

33 Ely Place
Electrical Load Assessment
Engineer: CM
Date: 11/02/22
Revision: 0

Areas	M²	W/m²	kW	Amps	Power Factor	kVA	Diversity	Diversified Load (kVA)
Landlord Services								
Lighting	100	10			0.97		0.8	0.82
Small Power	100	15			0.95		0.5	0.79
Lift			12		0.85		0.2	2.82
Comms			10		1		0.8	8.00
Total								**12.44**
MCC								
Water Booster			12		0.85		0.4	5.65
CAT 5			1		0.95		0.6	0.63
Water Conditioner			0.1		0.95		0.8	0.08
Leak Detection			0.1		0.95		0.8	0.08
AHU			5		0.95		0.8	4.21
Condenser			22		0.95		0.8	18.53
Water Heaters			15		0.95		0.6	9.47
Total								**38.66**
Offices								
Basement								
Small Power	55	25			0.95		1	1.45
Lighting	55	10			0.97		1	0.57
Ground								
Small Power	85	25			0.95		1	2.24
Lighting	85	10			0.97		1	0.88
1st								
Small Power	85	25			0.95		1	2.24
Lighting	85	10			0.97		1	0.88
2nd								
Small Power	85	25			0.95		1	2.24
Lighting	85	10			0.97		1	0.88
3rd								
Small Power	85	25			0.95		1	2.24
Lighting	85	10			0.97		1	0.88
							1	
Total								**14.47**
Total Load								**65.56**

33 Ely Place

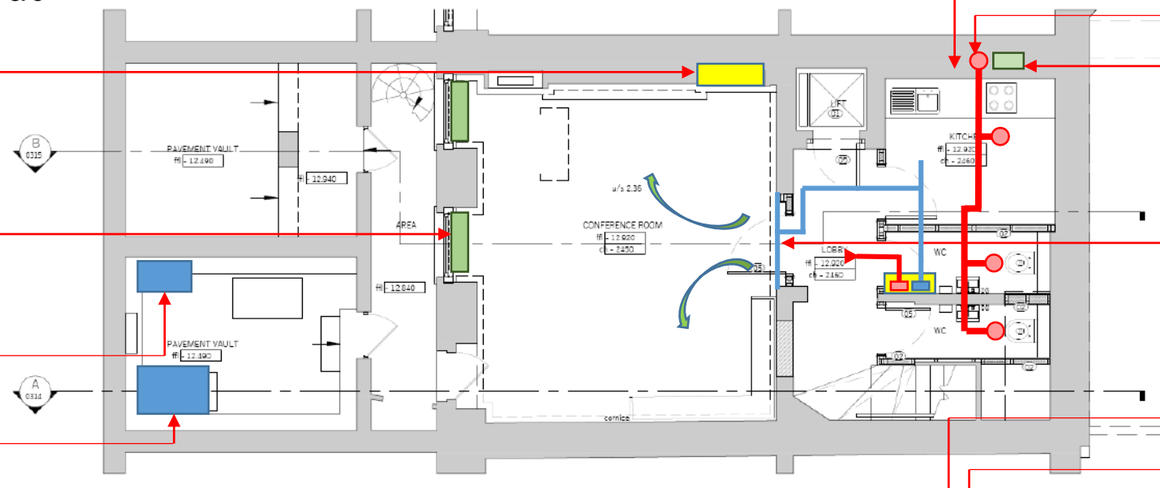
Lower Ground Floor Concept M&E Layout

Electrical Services Riser

VRV units
(Wall Mounted within Casing)

Cat 5 (non-potable) booster pump and tank set.

Cold Water Services booster pump set and break tank.



H&CWS Pipework Riser

WC Extract Ventilation

VRF Pipework Riser

Office fresh air supply via central grill and plenum arrangement.

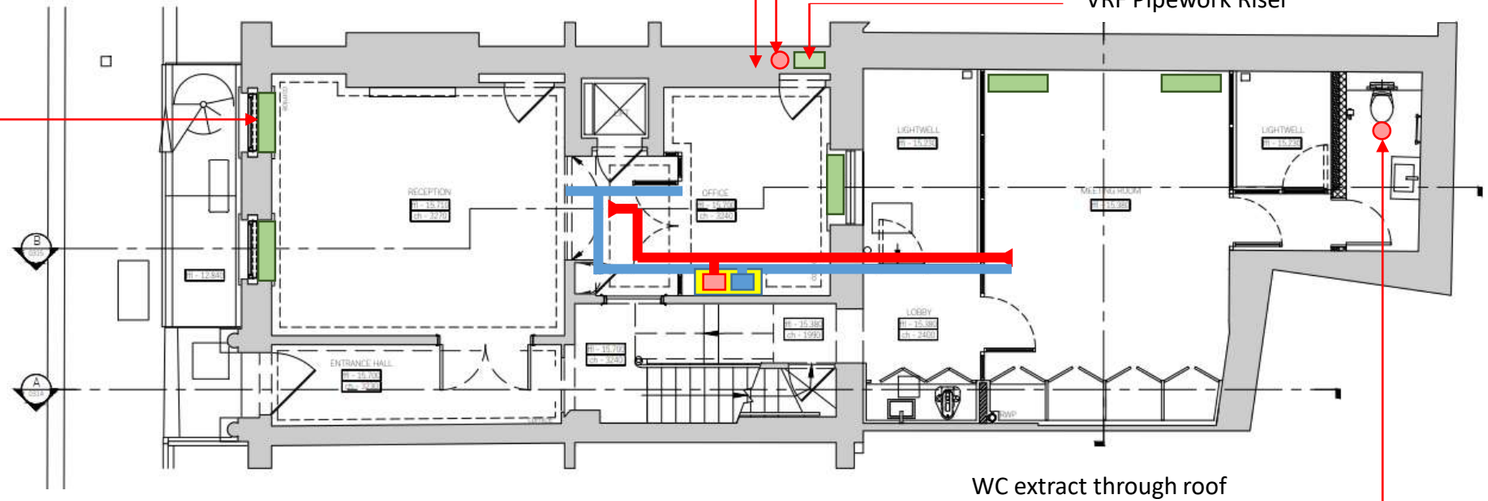
H&CWS Pipework Riser

WC Extract Ventilation

VRF Pipework Riser

Ground Floor Concept M&E Layout

VRV units
(Wall Mounted within Casing)



WC extract through roof termination with mushroom cowl.

General Note:

1. VRV pipework distribution to utilise existing pipework routes within joists.

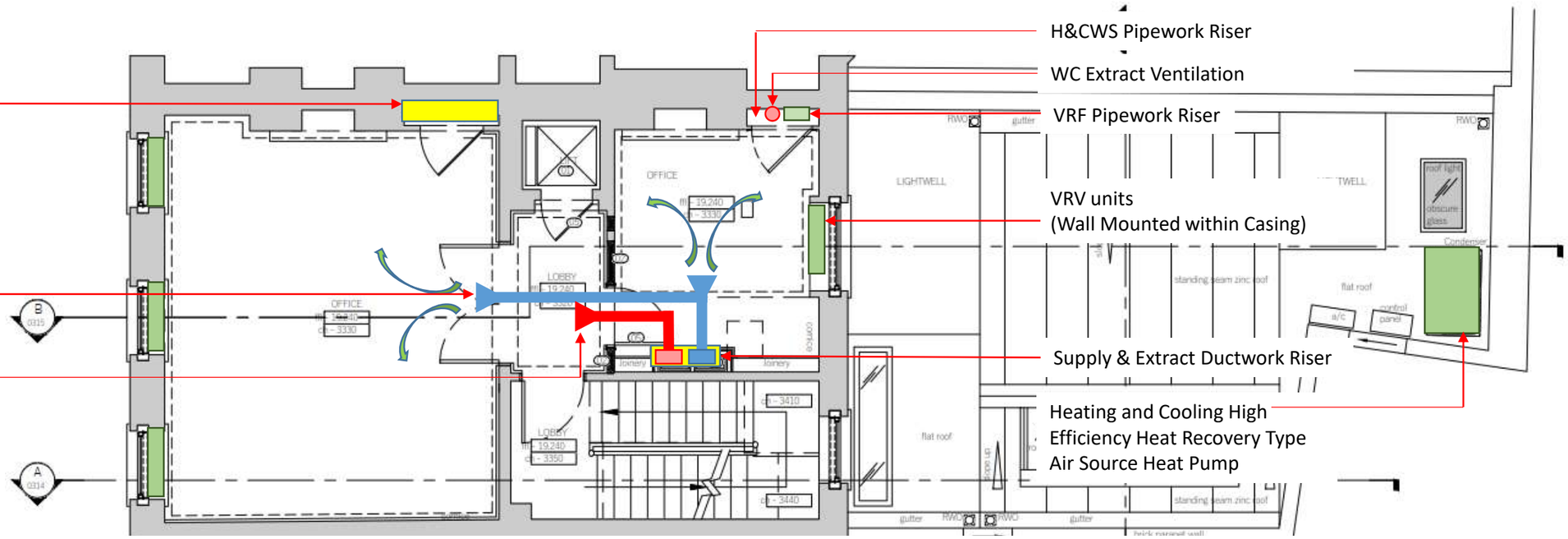
33 Ely Place

1st Floor Concept M&E Layout

Electrical Services Riser

Office fresh air supply via central grill and plenum arrangement.

Central extract bellmouth within core space

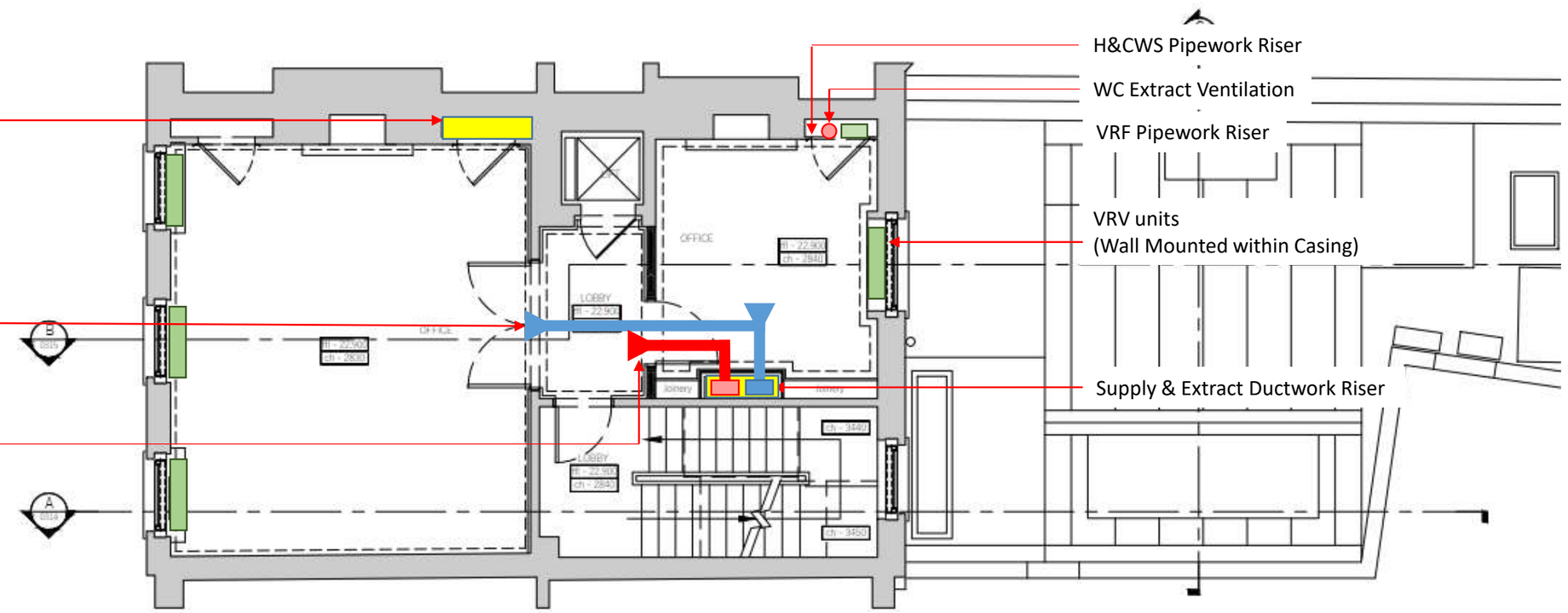


2nd Floor Concept M&E Layout

Electrical Services Riser

Office fresh air supply via central grill and plenum arrangement.

Central extract bellmouth within core space



General Note:

1. VRV pipework distribution to utilise existing pipework routes within joists.

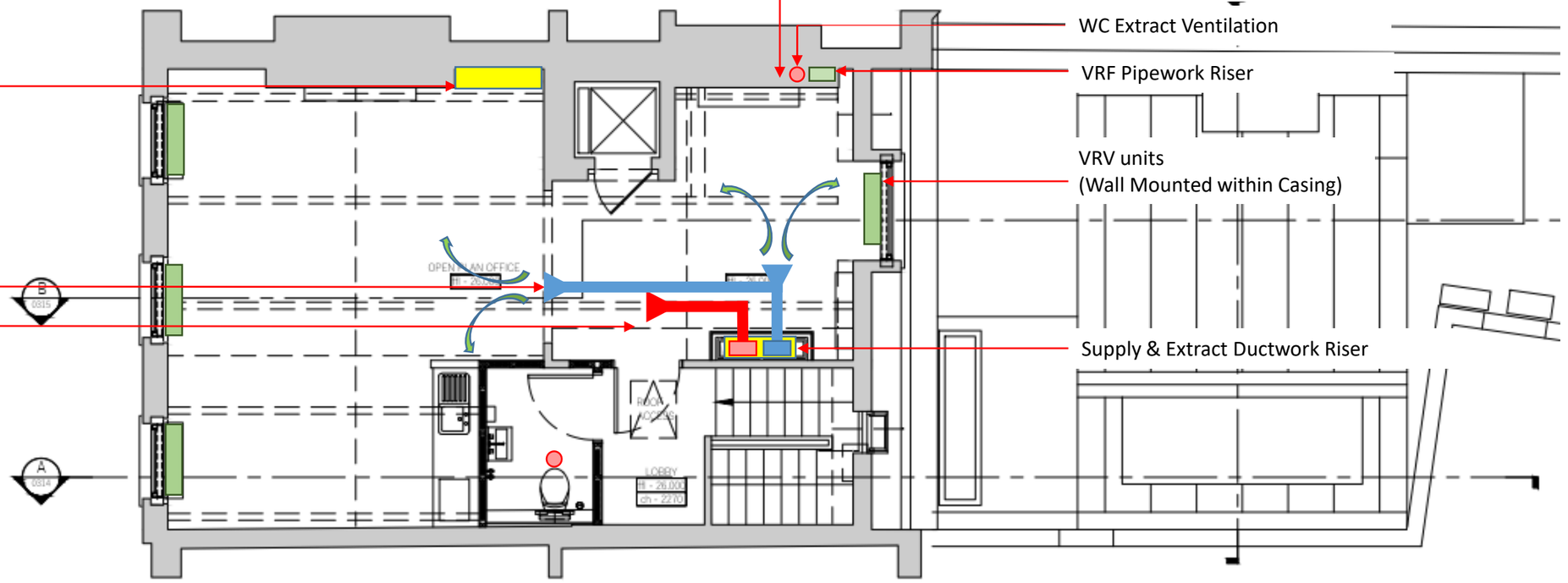
33 Ely Place

3rd Floor Concept M&E Layout

Electrical Services Riser

Office fresh air supply via central grill and plenum arrangement.

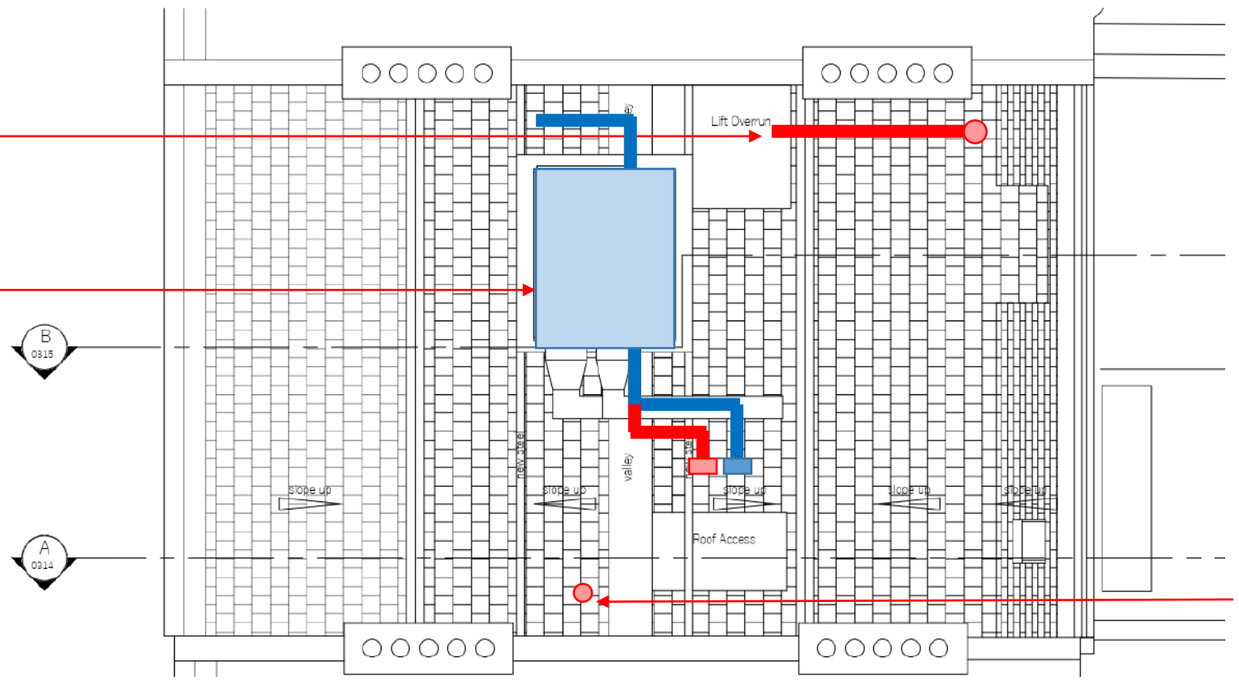
Central extract bellmouth within core space



Roof Level Concept M&E Layout

WC extract Fan and discharge adjacent to lift overrun.

Air handling unit complete with cross flow heat exchanger.



WC Extract mushroom cowl termination through roof slate.

General Note:

1. VRV pipework distribution to utilise existing pipework routes within joists.

33 Ely Place

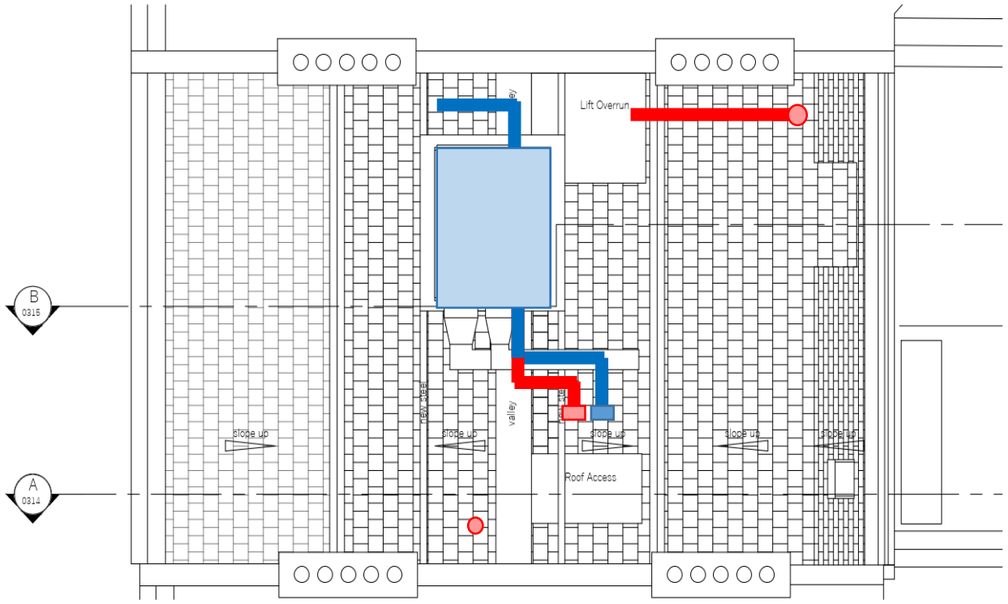
Plant Considerations

Roof Plant Schedule

- (1st Floor Roof) VRV Condensing Unit : REYQ16U (45kW) 1685mmH x 1240mmW x 765mmD (314kg)

- Heat Recovery AHU: ADT03FCD1 (557l/s) 1540mmH x 990mmW x
- 2500mmL (555kg)

- WC Extract Fan: ACM200T (60l/s) 276mmH x 223mmW x 300mmD

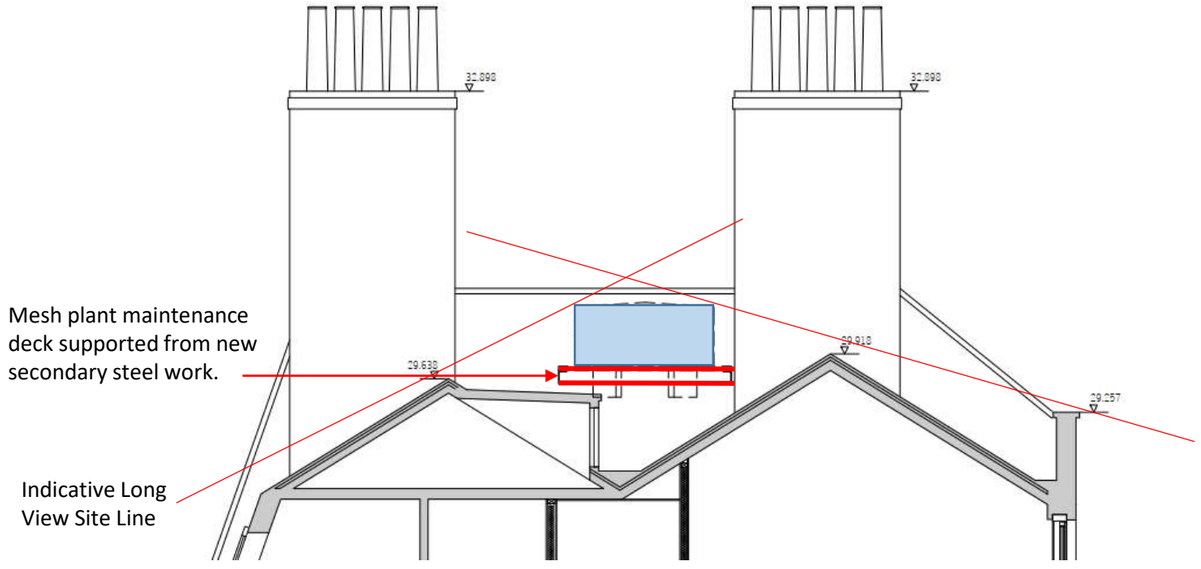


Plan View

VRV Condenser

Air Handling Unit

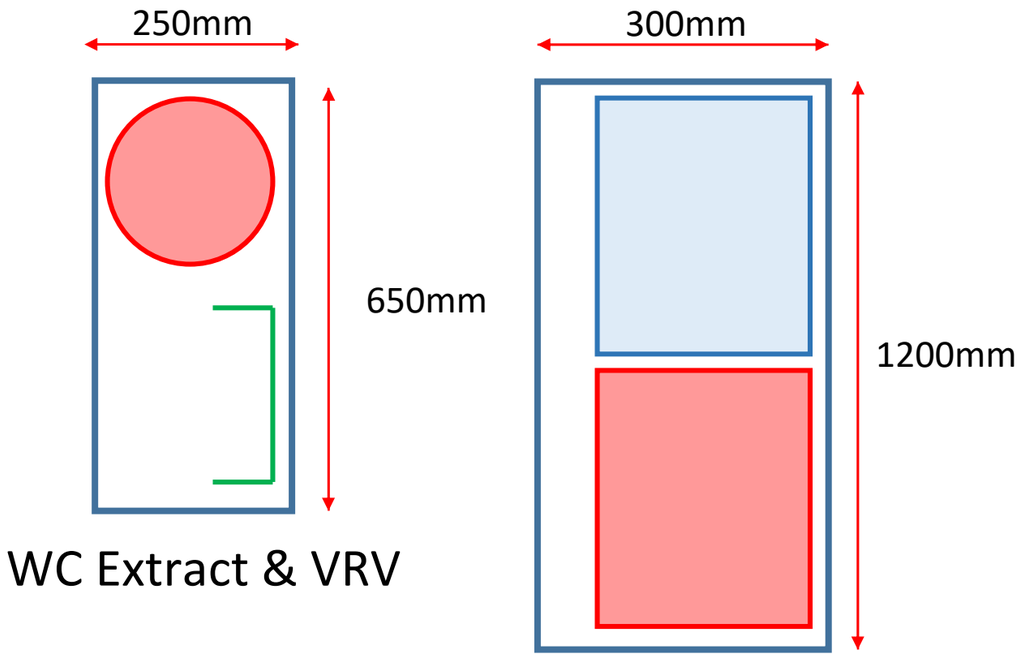
WC Extract Fan



Section View

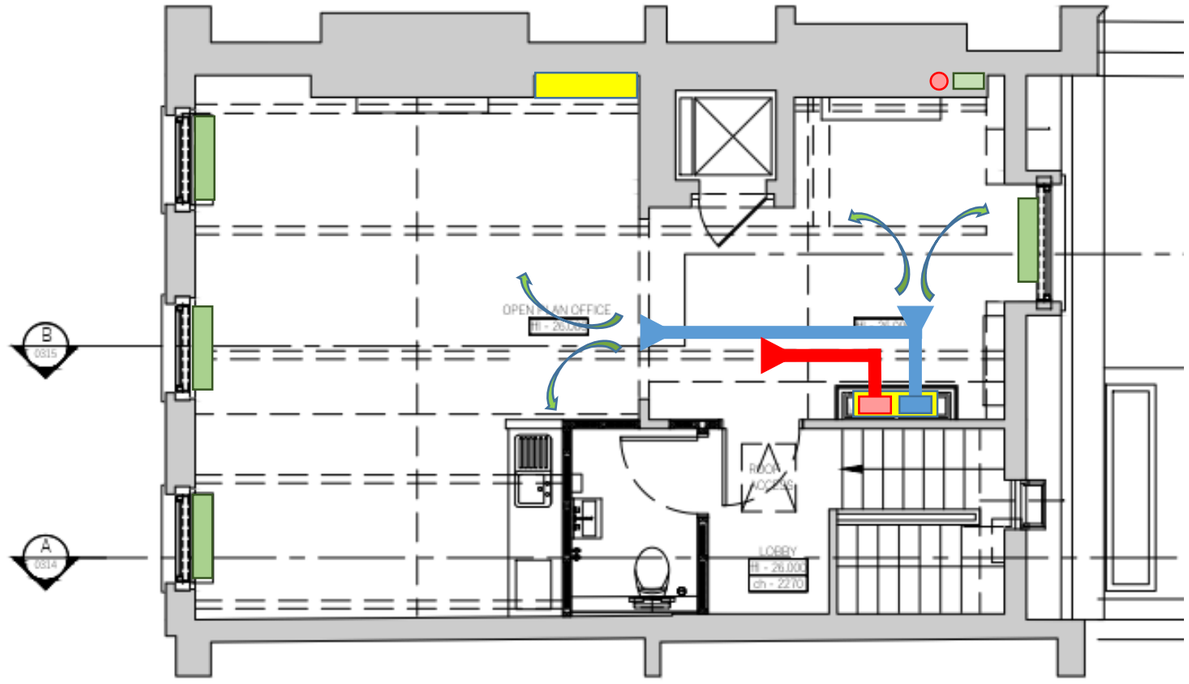
33 Ely Place

Typical Riser Detail



WC Extract & VRV

Supply & Extract Ventilation



33 Ely Place
Lighting Considerations

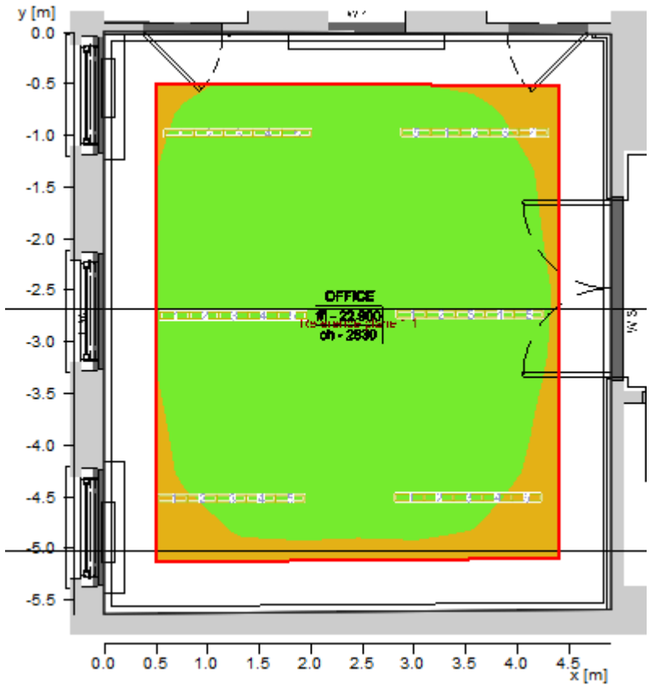
Lighting
The lighting installation shall be in compliance with both the BCO Guide to Specification, 2014 and the SLL Code for Lighting, 2012, as indicated below.

- General office lighting 300 – 500lx, 0.4u, 19UGR.
- Toilet lighting 150 – 200lx, 0.4u, 21UGR.
- Stairs / Corridors 100lx, 0.4u, 21UGR.
- Kitchenette areas 500lx, 0.4u, 19UGR.
- Plant areas 200lx, 0.4u, 25UGR.

As a note, the BCO guidelines shall take precedence over the SLL guidelines.

Emergency Lighting
BS 5266-1 indicates that a minimum of 1lux shall be provided to any defined escape routes (with a maximum width of 2m). Any rooms greater than 60m² shall be provided with a minimum of 0.5lx.

High Efficiency Calculation



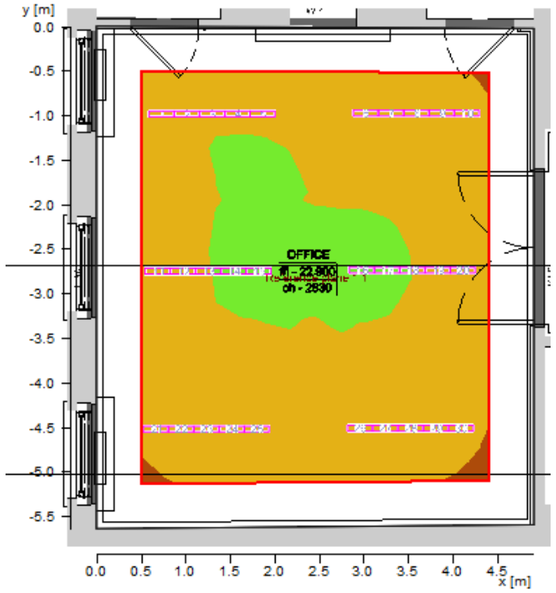
General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	19200.00 lm
Total power	120.0 W
Total power per area (27.59 m²)	4.35 W/m² (1.34 W/m²/100lx)

Evaluation area 1	**Reference plane 1.1**
	Horizontal
Em	326 lx
Emin	245 lx
Emin/Em (Uo)	0.75
Emin/Emax (Ud)	0.67
Position	0.75 m

33 Ely Place
Lighting Considerations

High Output

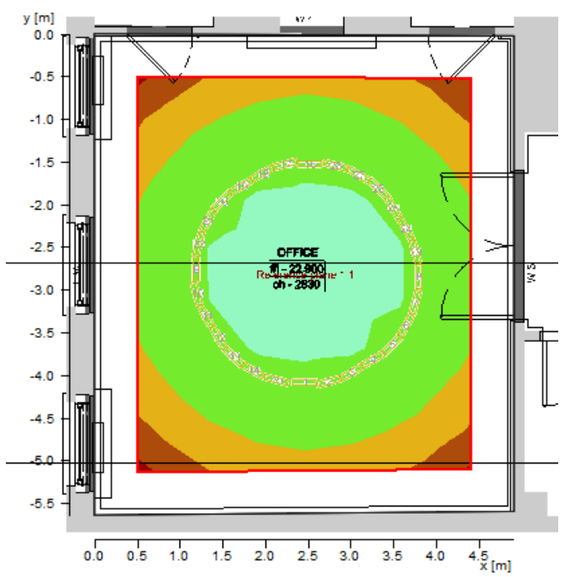


General

Calculation algorithm used	Average indirect fraction
Maintenance factor	0.80
Total luminous flux of all lamps	38400.00 lm
Total power	237.0 W
Total power per area (27.59 m²)	8.59 W/m² (1.32 W/m²/100lx)

Evaluation area 1	**Reference plane 1.1**
	Horizontal
Em	651 lx
Emin	490 lx
Emin/Em (Uo)	0.75
Emin/Emax (Ud)	0.67
Position	0.75 m

Suspended Circular Luminaire

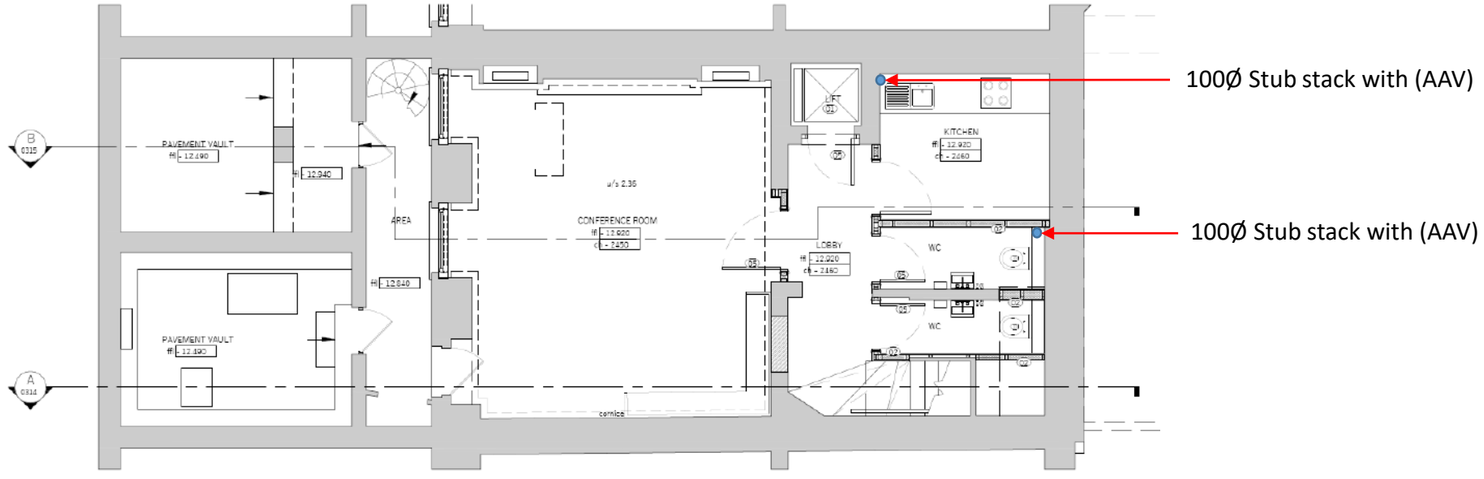


Total luminous flux of all lamps	17920.00 lm
Total power	112.0 W
Total power per area (27.59 m²)	4.06 W/m² (1.10 W/m²/100lx)

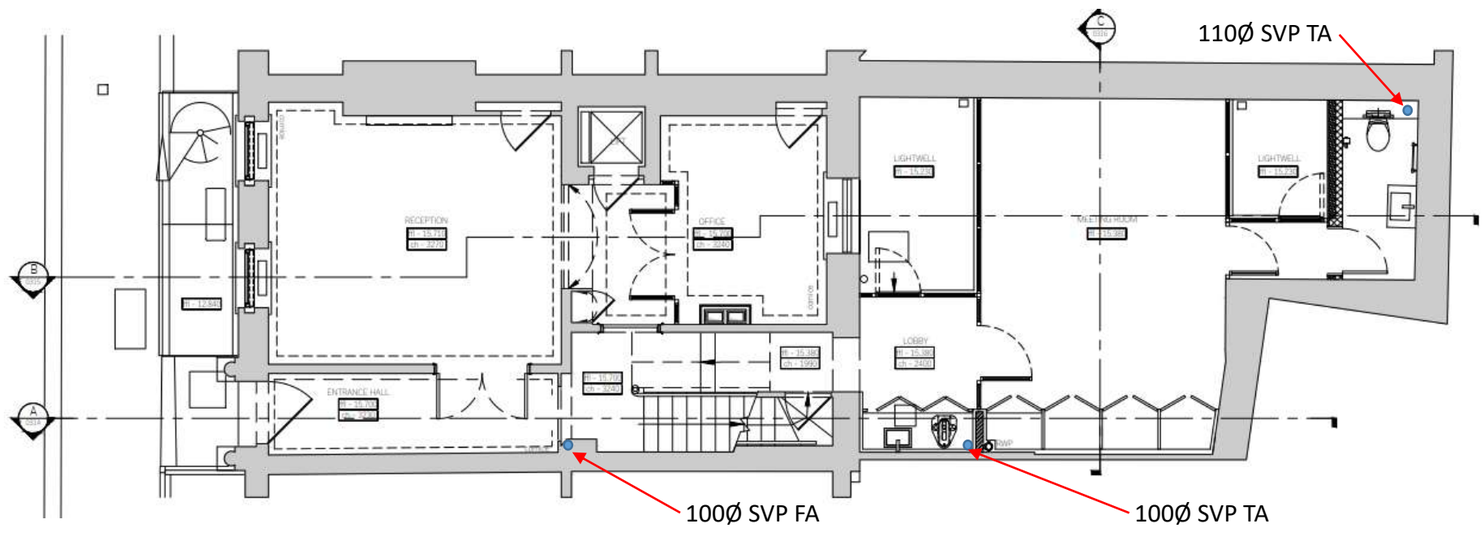
Evaluation area 1	**Reference plane 1.1**
	Horizontal
Em	370 lx
Emin	175 lx
Emin/Em (Uo)	0.47
Emin/Emax (Ud)	0.35
UGR (3.6H 4.2H)	<=22.8
Position	0.75 m

33 Ely Place

Lower Ground Floor Drainage Strategy



Ground Floor Drainage Strategy

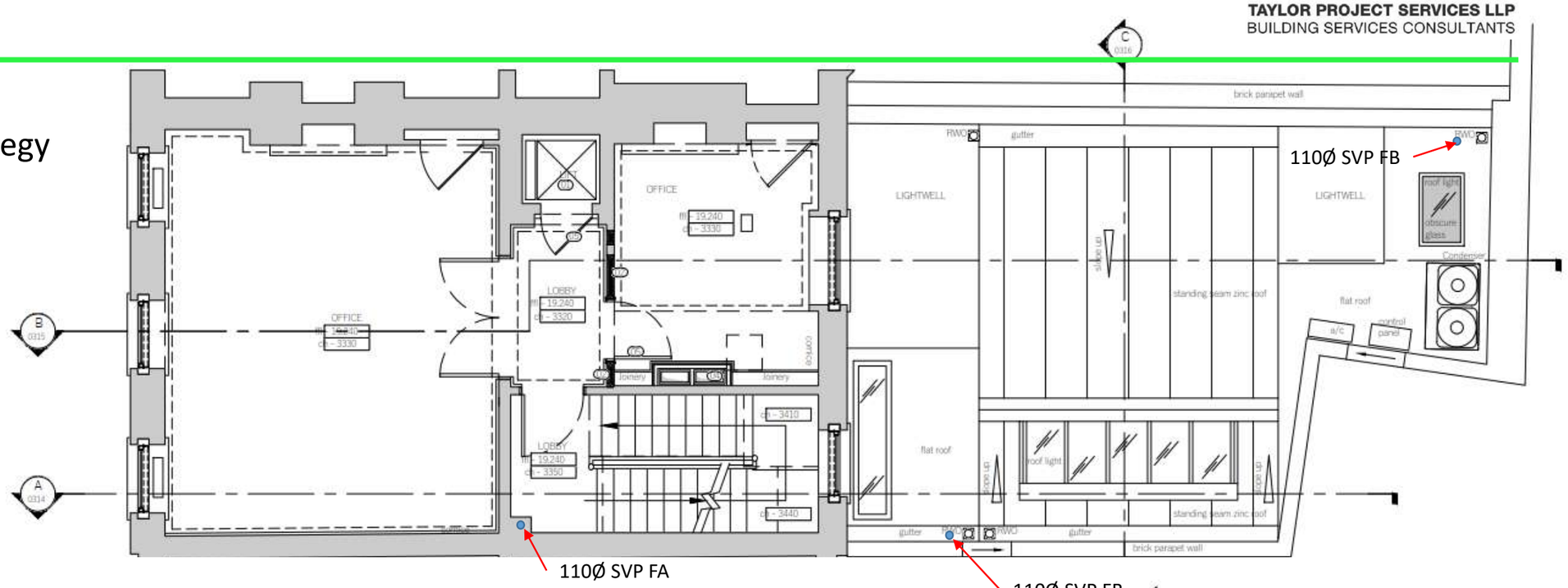


General Notes:

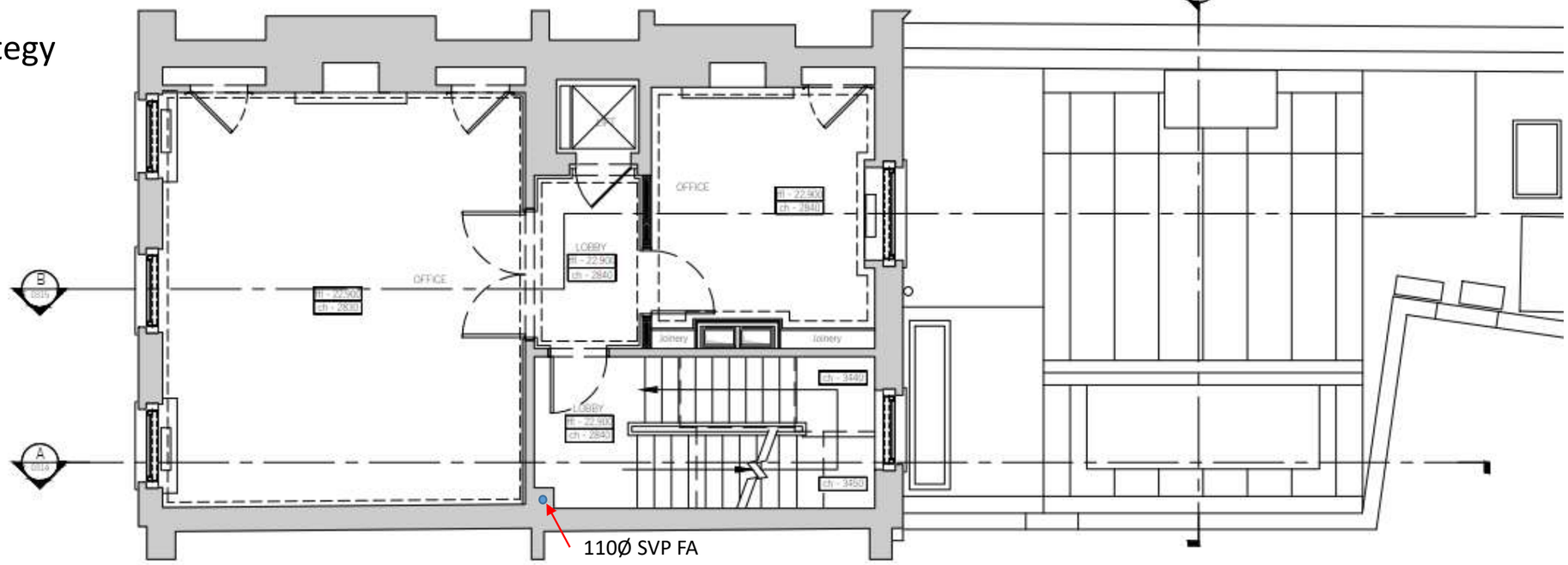
A Drainage CCTV condition survey is recommended to understand the current condition and topography of the existing drainage to inform the proposed alteration works.

33 Ely Place

1st Floor Concept Drainage Strategy



2nd Floor Concept Drainage Strategy

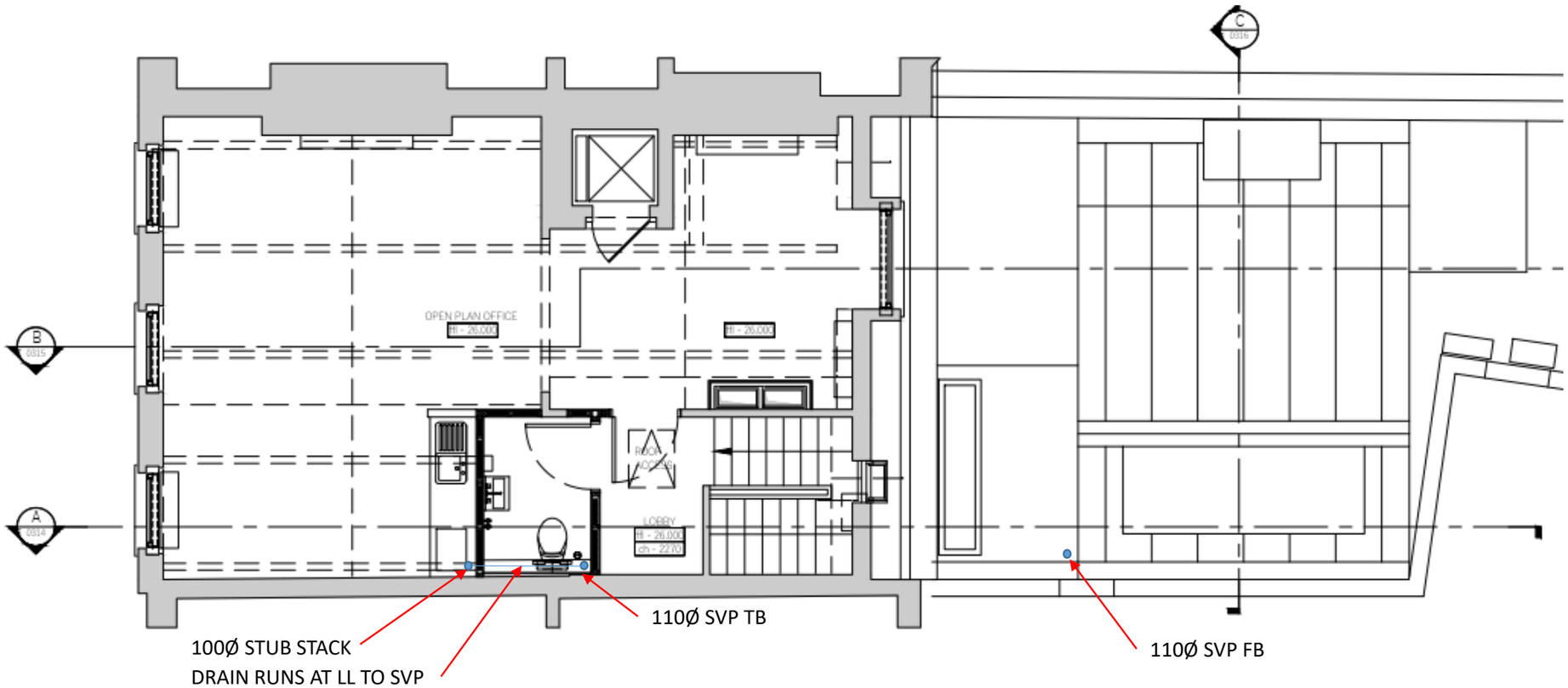


General Notes:

A Drainage CCTV condition survey is recommended to understand the current condition and topography of the existing drainage to inform the proposed alteration works.

33 Ely Place

3rd Floor Concept Drainage Strategy



General Notes:

A Drainage CCTV condition survey is recommended to understand the current condition and topography of the existing drainage to inform the proposed alteration works.

33 Ely Place

TPS.
TAYLOR PROJECT SERVICES LLP
BUILDING SERVICES CONSULTANTS

16.3 Appendix C

33 ELY PLACE

STAGE 2 REPORT

PARMAR BROOK

CONTENTS

PARMAR BROOK

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Document Ref.
PB-2394-33 Ely Place Stage 1 Report

Revision
[0]

INTRODUCTION

PARMAR BROOK

Parmarbrook have been commissioned to undertake the structural engineering appraisal associated with the proposed redevelopment at 33 Ely Place, London. DMBA are leading a multidisciplinary design team that have developed the scheme.

The purpose of this Stage 2 Report is to outlines the structural design philosophy for the proposed scheme and detail the proposed design solutions and/o alternative options under consideration. It is intended to be a working document, updated whenever necessary as the project develops. It will be issued to all relevant parties including the Client and design team members.

Various assumptions have been made in the design, these are stated in relevant sections and until comments are received it is assumed that they are accepted by all members of the project team as a basis design.

The philosophy outlined in this document relates to the project as it stands at Stage 2 status design and should be read in conjunction with the relevant Consultants drawings and Reports. Changes to the detail of this scheme will be highlighted in future revisions of the specifications.

SITE INFORMATION

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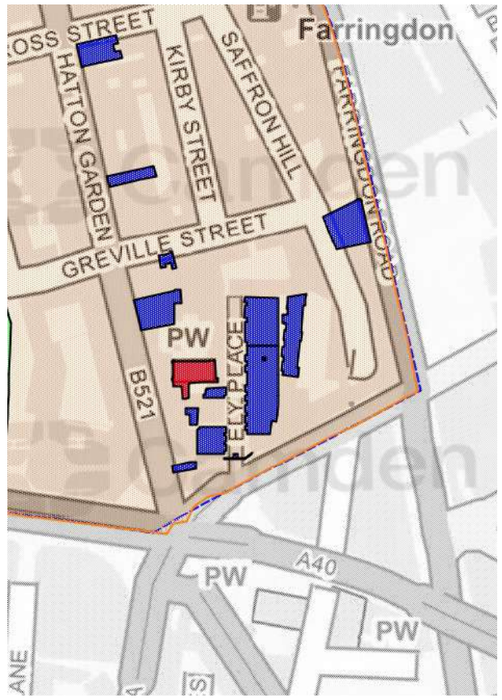
2.1 Site Location

The site is located at 33 Ely Place a largely commercial area in London The building forms part of a listed terrace of Georgian properties, located close to Farringdon Station.

Photo of front elevation of 33 Ely PLace



City of London – Listed Buildings Map

Site Location Plan

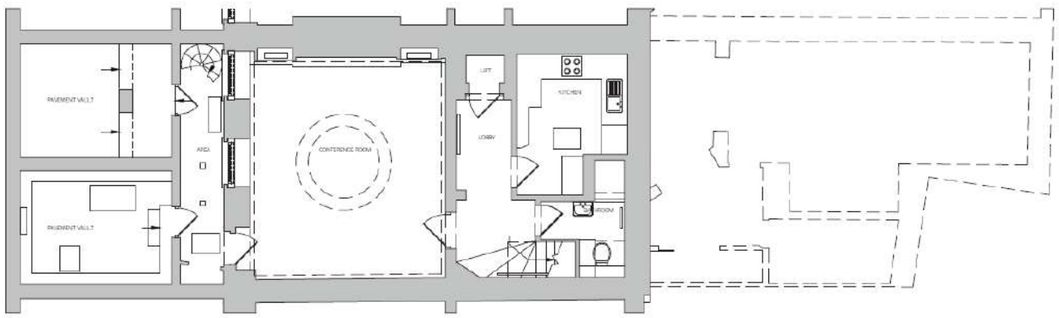
EXISTING STRUCTURE

PARMAR
BROOK

has been well preserved and is located within the London Borough of Camden.

3.1 Superstructure

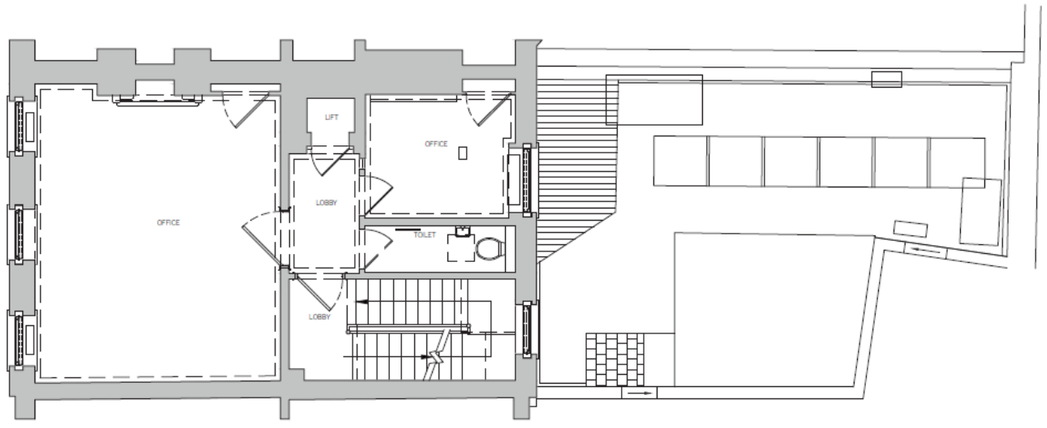
In absence of record drawings, reasonable assumptions have been made around the structural layout and build-up of the existing structure, based on typical buildings of the same age and use class and available archive information.



Existing Lower Ground Floor Plan

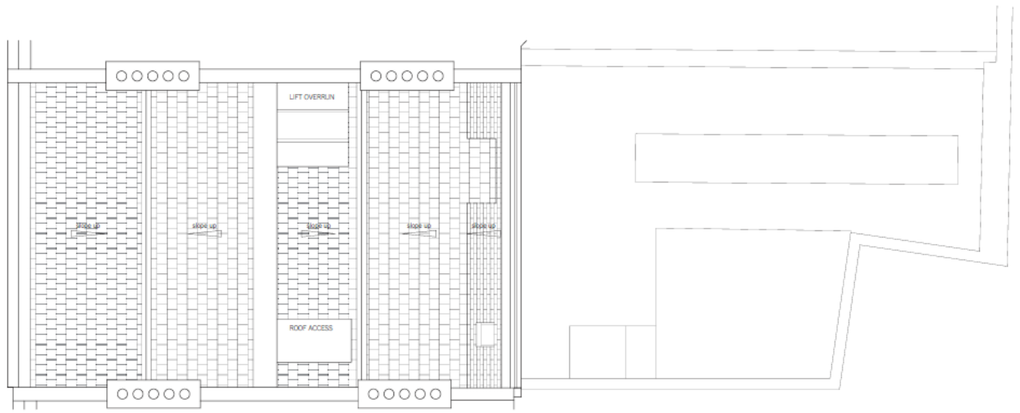
The building is masonry construction, with traditional timber floors spanning from the front wall of the property to a spine wall roughly in the centre and from the spine wall to the rear façade. It is anticipated that the front and rear walls of the property are better quality masonry than the Party walls between adjacent properties.

At the front of the property beneath the pavement are two vaults, historically used for coal and general storage purposes.



Existing First Floor Structure

The original garden space at the rear of the property has been infilled to create a single storey office and meeting area, the building is attached to the main building, however is considered to be structurally independent.



The roof of the main building is traditional construction with timber rafters, supporting a tiled roof. The roof form is double butterfly, as shown on the image above.

3.1.1 Substructure

The existing substructure comprises a Lower Ground Floor and Basement levels with a larger plan area compared to the footprint of the superstructure. Information regarding the foundation of the structure is not available; at this stage we have assumed traditional strip foundations. This will be confirmed following the structural investigations.

3.1.2 Investigations

To confirm the assumptions made in the analysis of the existing building a range of structural investigations will be specified during the next phase of the works. These comprise the following:

- Locally strip out to expose the existing structural floors
- Intrusive opening up works to determine existing finishes thickness and density;
- Core samples through the existing rear extension concrete slab to confirm the quality and build up.
- Opening up works to the lift pits to locate possible existing foundations and confirm their type, depth and size;
- Checks by a specialist timber company to assess the quality of any timbe embedded in the existing walls.

PROPOSED STRUCTURAL ALTERATIONS

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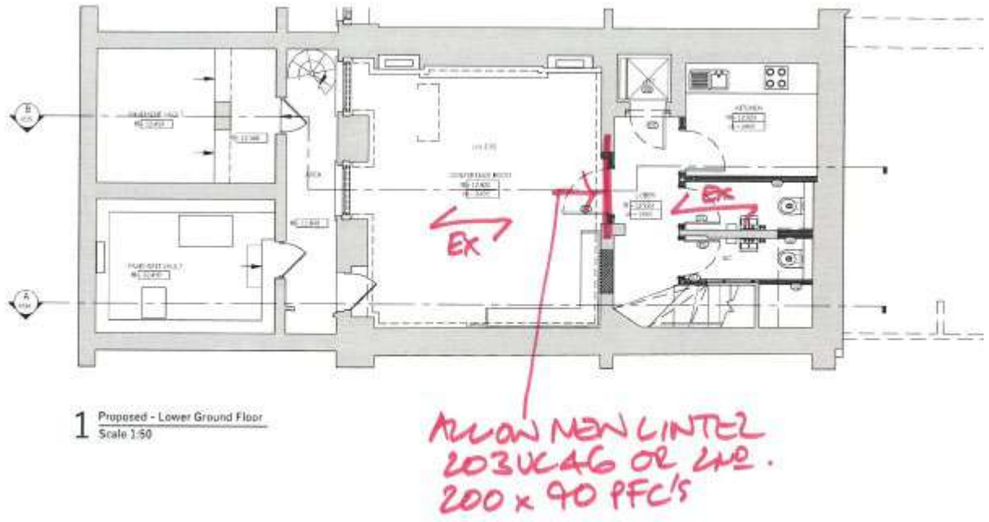
The proposed structural alterations can be summaries as follow:

- Widening of door ways and openings internally as shown on the Architectural drawings
- Demolition of the existing rear garden extension and the construction of a new extension
- Support of plant at roof level

4.1 Widening of Spine Wall Openings

It is proposed to widen the existing openings in the spine wall at Lowerground, first and second floor level. At this stage allowance has been made for the installation of a new lintel to achieve this as shown in the image below.

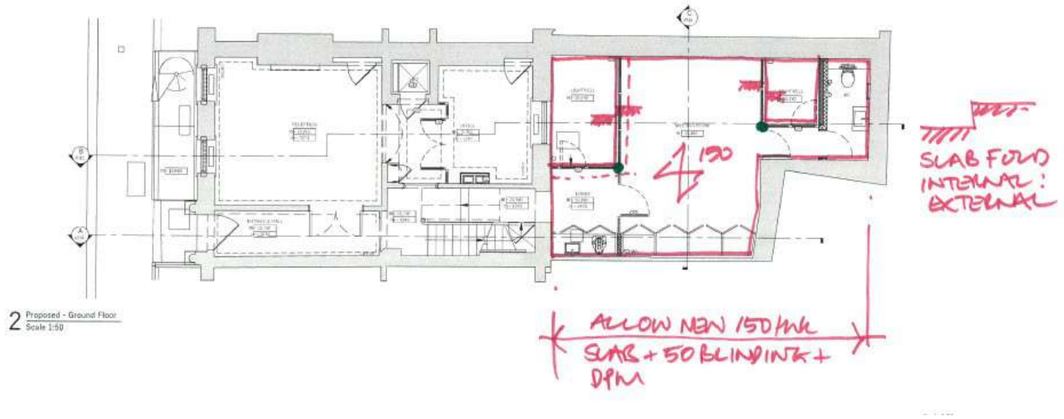


Plan View – Proposed Lower Ground Showing Widened Opening, similar openings to be formed on first and second floor levels

This approach will be reviewed once the construction of the spine wall has been confirm and if practical a timber trimming detail will be adopted, which is deemed to be more sympathetic to the existing building fabric.

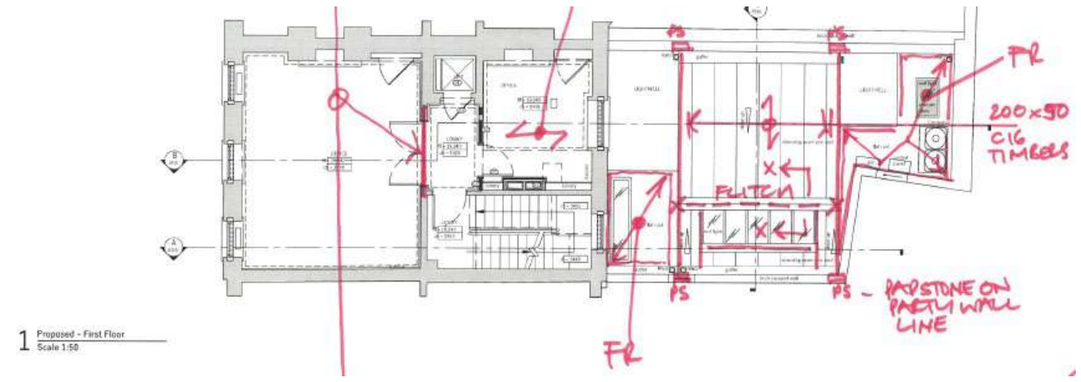
4.2 New Rear Extension

The proposal includes the demolition of the existing rear extension and replacement with a new enhanced space. Currently it is proposed to demolish the foundations and existing ground bearing slab and replace with new – an approach which will be reviewed following intrusive opening up works (to assess whether the slab and/ or foundations can be reused.



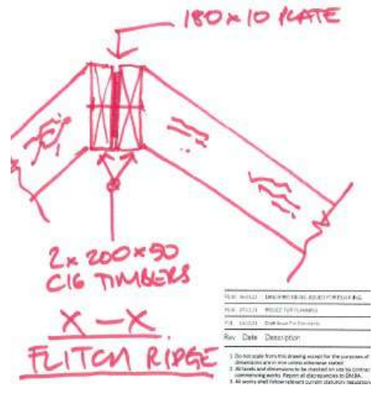
Plan View – Ground Floor showing proposed new slab

The roof form varies across the length of the rear extension, with two areas of flat roof adjacent to the lightwells, as shown below. In the centre of the space will be a pitched roof area, which will be formed in Architecturally exposed timber.



Plan View – New Extension Roof

At the edges of the pitched roof area it is proposed to install two cranked flitch beam/ rafters – these are to be used to prevent the overall roof frame from spreading and thrusting against the party walls. A typical detail of a timber flitch is as shown below:

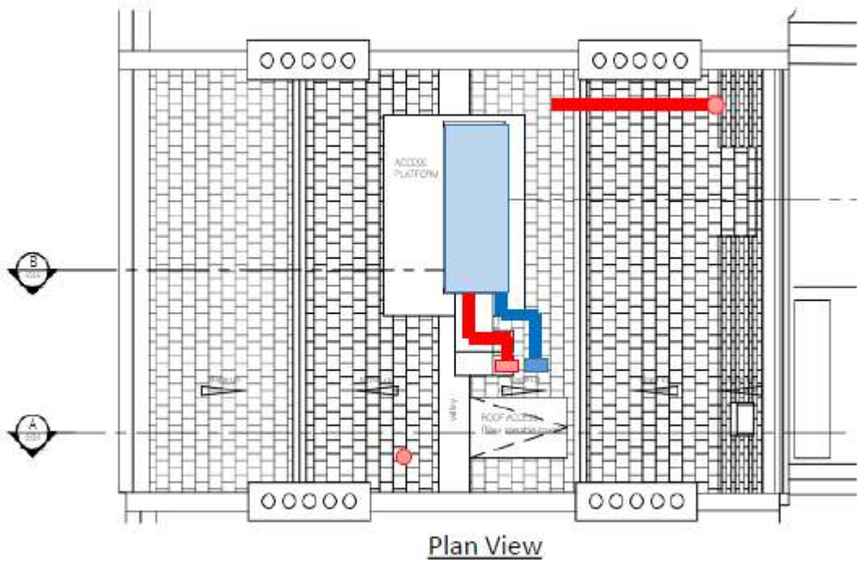


Proposed Recessed Flitch Detail

Example of Exposed Timber Flitch

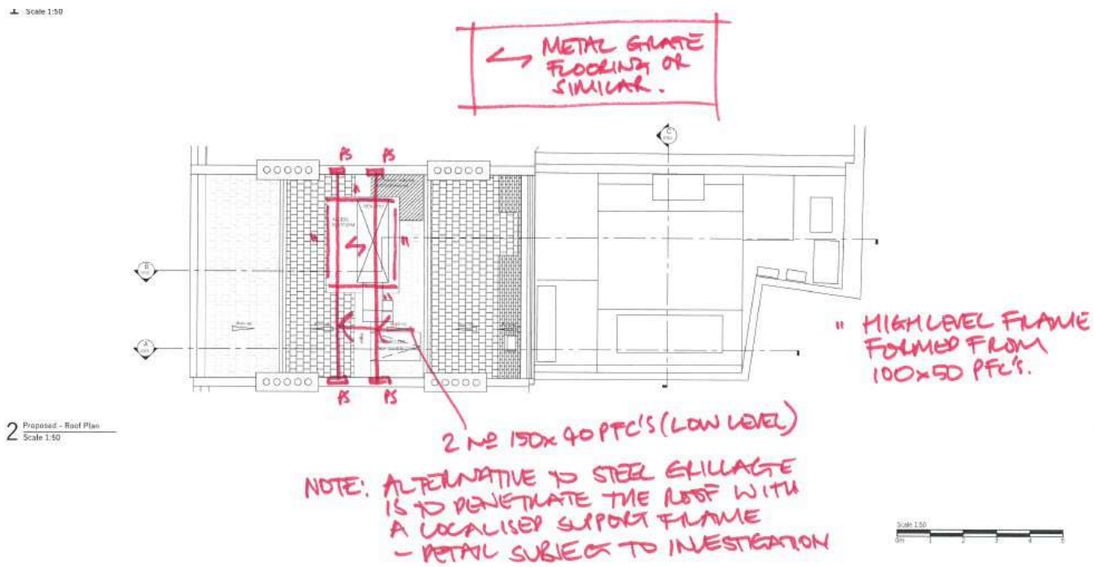
4.3 Roof Top Plant

As part of the proposed upgrades to the building M&E systems it is required to install a roof top condenser in the location shown below:



Proposed Location of Roof Top Condenser

At this stage it is proposed to support this condensing unit via a new steel grillage spanning between party wall lines, the arrangement of this is as shown below:



Proposed Steelwork Arrangement to Support Roof Top Plant

BASIS OF DESIGN

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5.1 Design Criteria

The proposed building structure will be designed to current Eurocode standards with the existing frame analysed in Eurocode Standards. It is not envisaged that there will be any derogations to these standards and codes, nor any unique or unusual design and/or construction methods that would first need discussion and agreement with the local building control authorities.

5.1.1 Deflections

5.1.1.1 Vertical Displacement Limits

General

The deflection of a structural element should not be such that affects the functionality or appearance of the finished building. The deflections should be limited to the followings:

Deflection due to dead load	Relative Span/250
Deflection due to imposed load	Relative Span/360
Deflection for non-brittle elements	Relative Span/200
Total deflection of floor beams generally	Relative Span/250
Deflection due to dead load (Cantilever)	Relative Span/125
Deflection due to imposed load (Cantilever)	Relative Span/180
Deflection due to total load (Cantilever)	Relative Span/100

Spandrel Beams

The deflection criteria for the façade will be specific to the product and connections used. For the purposes of early stage design the following assumption will be made:

Deflection due to dead load	Absolute: 20mm
Deflection due to imposed load	Absolute: 10mm

Note: Spandrel beams are also subject to the general beam deflection limits, the most conservative limit will be adopted in their design.

Beam supporting masonry - Deflection due to total load	Relative Span/500

5.1.2 Movements

5.1.2.1 Primary Horizontal Movement Joint

A horizontal movement joist has been considered but has been deemed unnecessary, but this will remain under review until the preferred lateral stability system is confirmed.

5.1.2.2 Lateral Stability

Stability is provided by a concrete Shear core.

Lateral deflection limits of new construction:

Overall horizontal displacement over the building height (H)	Relative Height/500
Horizontal displacement over individual storeys	Relative Height/500

2nd order effects from lateral displacements have been considered in the Tekla Structural Analysis

5.1.3 Durability

Proposed concrete elements will be designed to the recommendations in BS EN 19921-1 Design of Concrete Structures and BS 8500 Concrete – Complementary British Standard to BS EN 206-1, and concrete mixes specified to suit the “normal” structural performance level.

Proposed steel structural elements will be designed to the recommendations in BS EN 1993 Design of Steel Structures and CIRIA Report 174 New paint systems for the protection of constructional steelwork.

5.1.4 Fire Protection

Refer to the Fire Consultant.

5.1.5 Tolerances

Typically, permissible deviations / tolerances will be as per the National Structural Concrete Specification and the National Structural Steel Specification, unless modified by the Parmarbrook project specifications.

5.1.6 Dynamics

Vibration criteria generally:

Natural Frequency fn	>4.5Hz
Response (Multiplying Factor)	<8

Vibration criteria generally for Hybrid Construction:

Natural Frequency fn	>8Hz
Response (Multiplying Factor)	not calculated

Staircase

Natural Frequency fn	>10Hz
Response (Multiplying Factor)	<32

No changes are proposed to the dynamic properties of the existing structure.

5.1.7 Structural Robustness

The design of the building assumes a categorisation of building type as Consequence Class 2B. The design of new structural elements will take account of the recommendations made in BS EN 1991-1-7 General Actions – Accidental Action. Where appropriate or necessary, the design of proposed elements will satisfy stability requirements of the building and be provided with effective horizontal and vertical ties.

5.2 Outline Specifications

5.2.1 General

The following design elements should be in accordance with the architect's details:

- Water and damp proofing
- Setting-out
- Floor separation and acoustic isolation
- External works
- Landscaping
- Finishes
- Internal partitions
- Insulation

5.2.2 Concrete

The following concrete grades have been used:

Yield strength for reinforcement bars	B500
Concrete aggregate	20 mm
Mean Young's modulus	28 N/m2.
Long term young's modulus	14 N/m2
Blinding – mass concrete	C20/25
Piles	According to pile subcontractor
Ground Floor Slab	C32/40*
Pile caps and Below Ground Structures	C32/40*
Composite slabs	C32/40

5.2.3 Steel

The steel grades used for the steelwork are the following:

Main rolled sections	grade: S355 J0*
Hollow sections	grade: S355 J0*
Fittings and flat braces	grade: S355

*JR or J2 steel grade may be used depending on limiting plate thickness.
All the joints are welded in the workshop and bolted on site. The bolts are of grade 8.8.

5.2.4 Temporary Works

The contractor is responsible for the design, installation and maintenance of all necessary works to ensure the strength and stability of the building throughout the construction process.

5.3 Design Parameters

5.3.1 Codes of Practice

5.3.1.1 Eurocode

The following standards are used in the design:

Actions on Structures:	BS EN 1991
Foundations and Earth retaining structure:	BS EN 1997
Steelwork	BS EN 1993
Reinforced and Precast Concrete:	BS EN 1992; BS 8500-1:2006
Durability	BS 7543:2003
Unreinforced and Reinforced Masonry:	BS EN 1996
Balustrading and hand railing:	BS 6180:2011

NEXT STEPS

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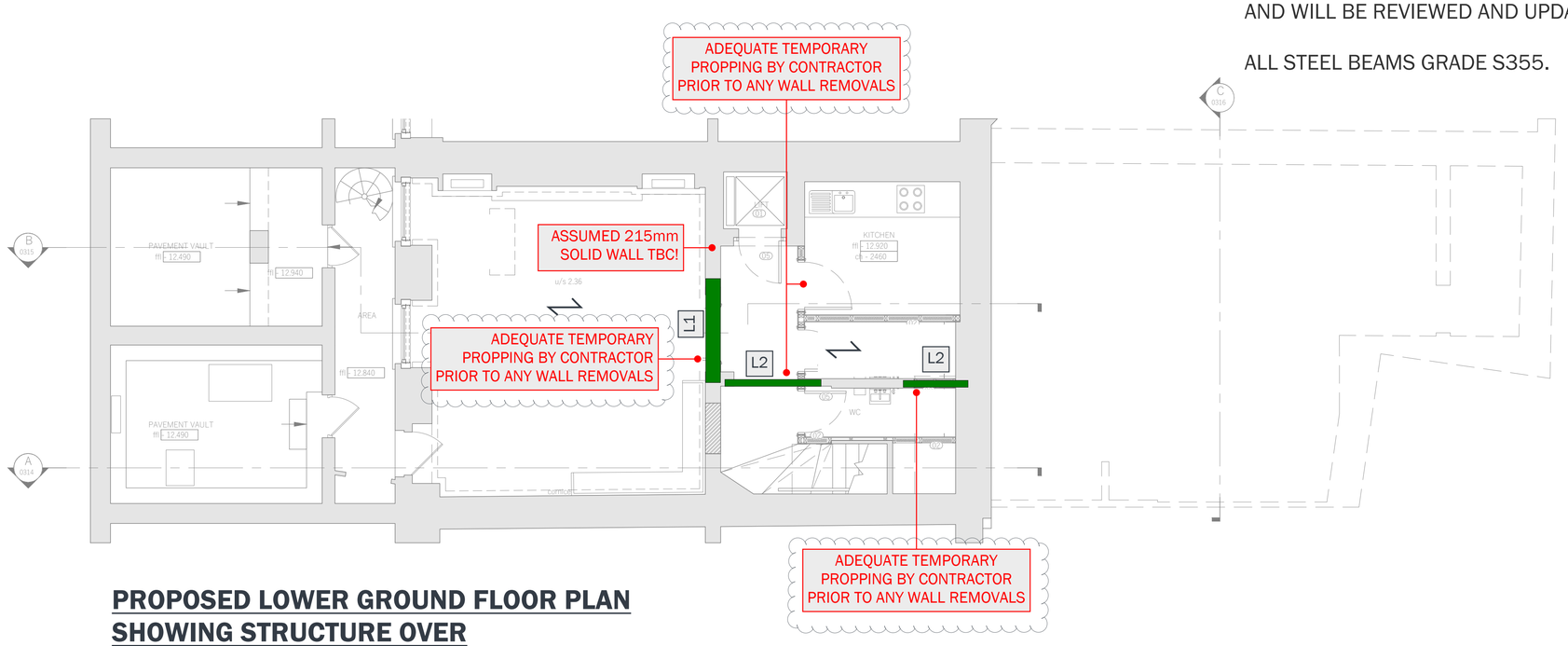
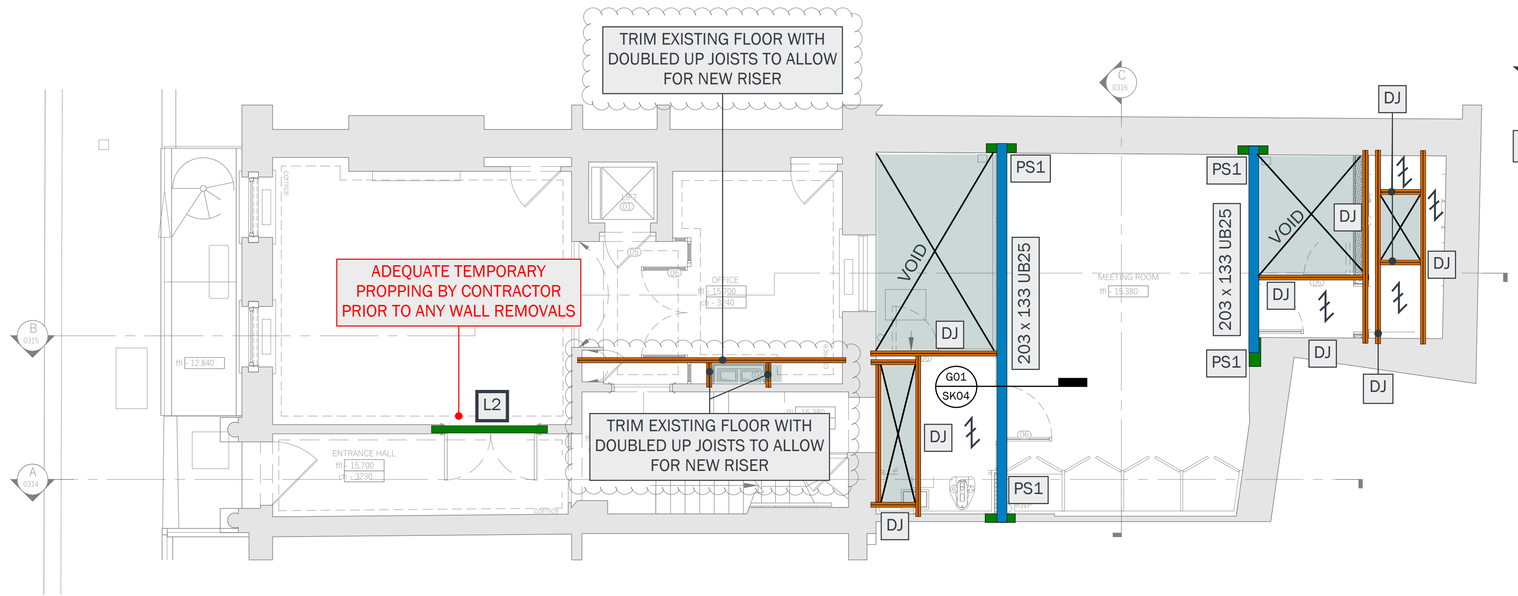
5.1 Next Steps

- Further design coordination/development
- Structural Surveys:
    - Structural survey to confirm construction
    - Intrusive slab survey at rear to determine existing finishes thickness, insulation, waterproofing and density
    - Locally open up spine wall to confirm construction type and build up
    - Intrusive foundation survey to determine build-up, type and dimensions
    - Locally strip out floor to expose existing structural arrangement and confirm joist spans
    - CCTV to confirm condition and capacity of existing below ground drainage assets



PROPOSED LOWER GROUND FLOOR PLAN SHOWING STRUCTURE OVER

SCALE 1:50



PROPOSED GROUND FLOOR PLAN SHOWING STRUCTURE OVER

SCALE 1:50

NOTES ON THE DESIGN:

THE DESIGN ILLUSTRATED IS SUBJECT TO DESIGN DEVELOPMENT AND COORDINATION. ALL STEEL SECTIONS AND SIZES ARE INDICATIVE ONLY AND WILL BE REVIEWED AND UPDATED AS THE DESIGN PROGRESSES.

ALL STEEL BEAMS GRADE S355.

LINTEL SCHEDULE

L1- 215w x 145dp R7 NAYLOR BEAM
L2- 100w x 100dp S4 NAYLOR BEAM
L3- 100w x 215dp R9 NAYLOR BEAM
OR 100 x 100 SHS5

ALL LINTELS TO HAVE 150mm MIN. END BEARING WHERE WALLS RUN PARALLEL, AND 100mm END BEARING WHERE WALLS RUN PERPENDICULAR.

PADSTONE SCHEDULE

PS1- 100w x 215L x 150dp CONCRETE PADSTONE

LEGEND

⇌ - ASSUMED SPAN OF EXISTING FLOOR JOISTS ABOVE. TBC!

⇌ - NEW 47x200 C16 FLAT ROOF JOISTS @400 CRS

DJ - DOUBLED UP JOISTS TO TRIM ROOF LIGHTS

PARMAR BROOK

Ground Floor, 4-8 White's Grounds, London, SE1 3LA
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Tel: 0207 839 3999
email: general@parmarbrook.com

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10. All work will be carried out in compliance with the requirements of the relevant statutory authorities and regulations.
11. All structural openings setting out to be confirmed in all architects and specialists drawings. Any discrepancies to be communicated to all parts, including Parmarbrook.

Rev	Date	Description	By
01	26.04.22	REVISIONS AS CLOUDED	EB

Project:
33 ELY PLACE, LONDON

Title:
PROPOSED LOWER GROUND FLOOR & GROUND FLOOR PLAN SHOWING STRUCTURE OVER

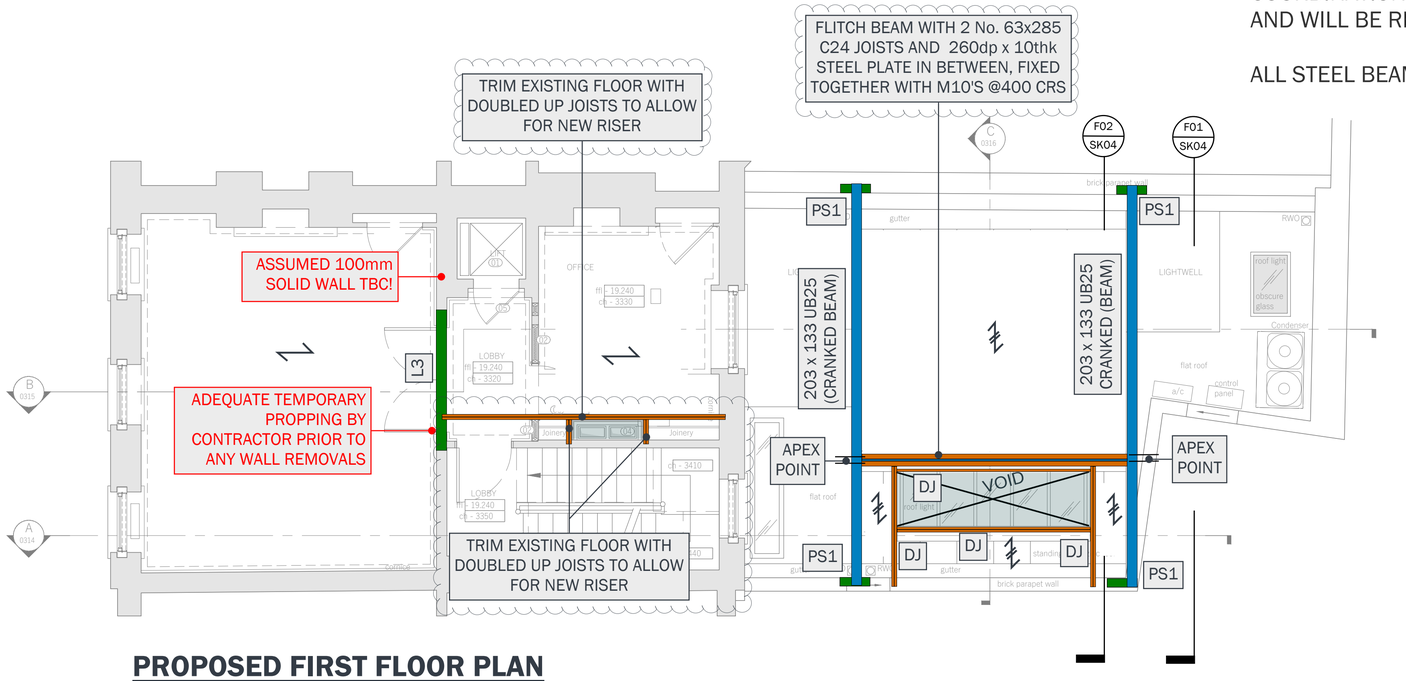
Client:
DMBA ARCHITECTS

Architect:
DMBA ARCHITECTS

Status:
STAGE 2- ISSUED FOR REVIEW

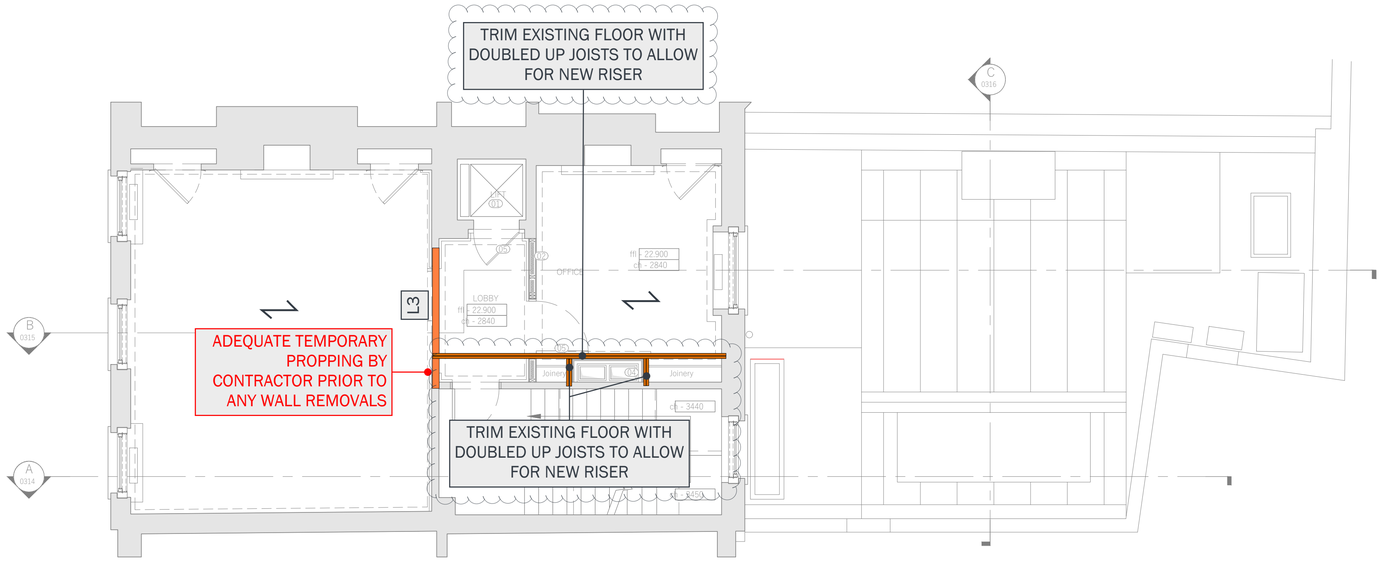
Designed:	Drawn:
EB	EB
Checked:	Date:
RSC	22.04.2022
Project No:	Scale
2394	A1@1:50

Drawing No: PB-2394-20.04.22-SK001
Suitability:
Rev: [0]



PROPOSED FIRST FLOOR PLAN SHOWING STRUCTURE OVER

SCALE 1:50



PROPOSED SECOND FLOOR PLAN SHOWING STRUCTURE OVER

SCALE 1:50

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ALL STEEL BEAMS GRADE S355

LINTEL SCHEDULE

L1- 215w x 145dp R7 NAYLOR BEAM
L2- 100w x 65dp ER1 NAYLOR BEAM
L3- 100w x 215dp R9 NAYLOR BEAM
OR 100 x 100 SHS5

ALL LINTELS TO HAVE 150mm MIN. END BEARING WHERE WALLS RUN PARALLEL, AND 100mm END BEARING WHERE WALLS RUN PERPENDICULAR.

PADSTONE SCHEDULE

PS1- 100w x 215L x 150dp CONCRETE PADSTONE

LEGEND

- ASSUMED SPAN OF EXISTING FLOOR JOISTS. ABOVE. TBC!
- NEW 47x200 C16 FLAT ROOF JOISTS @400 CRS
- NEW 47x200 C24 PITCHED RAFTER @400 CRS

DJ - DOUBLED UP JOISTS TO TRIM ROOF LIGHTS

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Rev	Date	Description	By
01	26.04.22	REVISIONS AS CLOUDED	EB

Project:
33 ELY PLACE, LONDON

Title:
PROPOSED FIRST FLOOR & SECOND FLOOR SHOWING STRUCTURE OVER

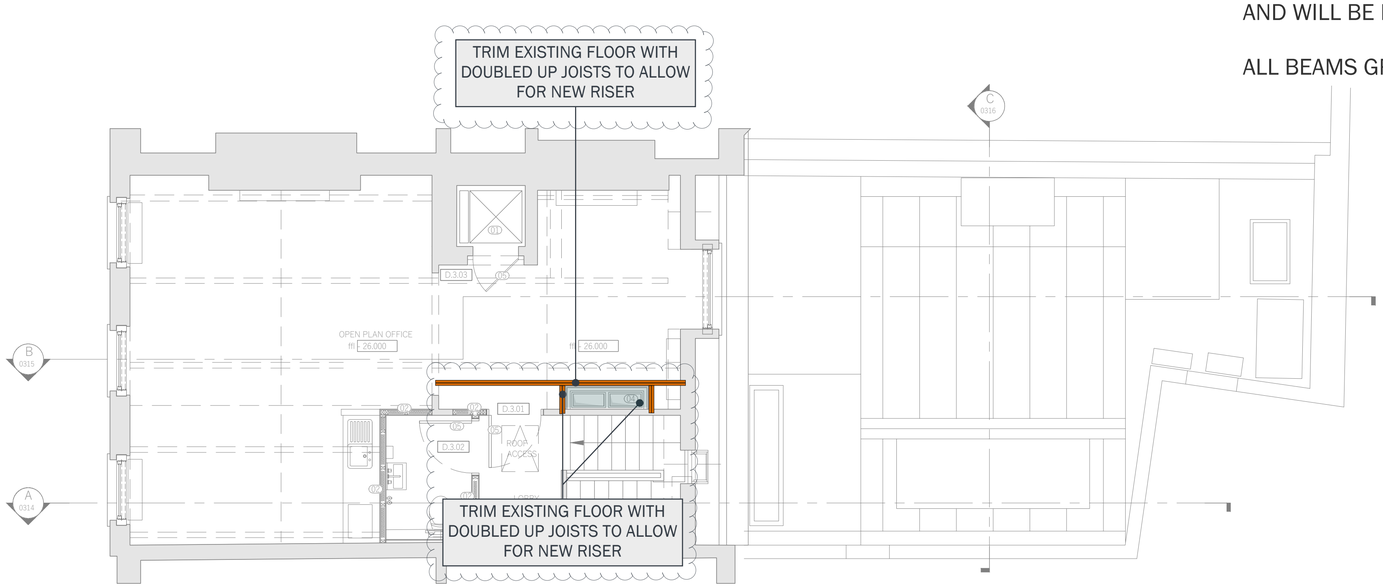
Client:
DMBA ARCHITECTS

Architect:
DMBA ARCHITECTS

Status:
STAGE 2

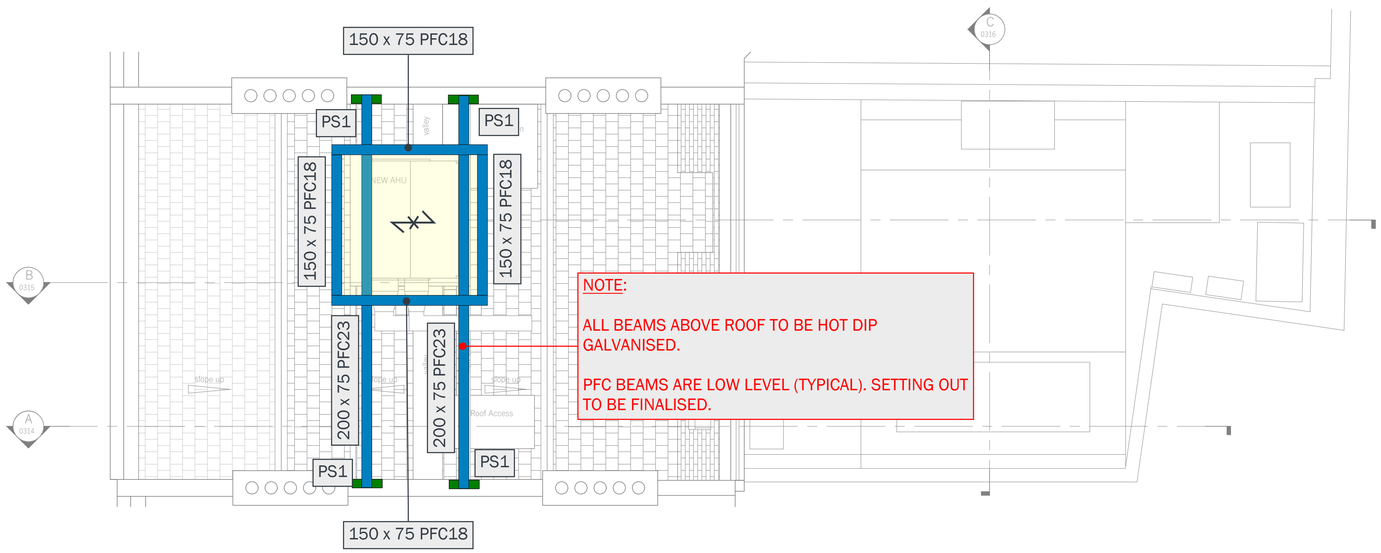
Designed:	Drawn:
EB	EB
Checked:	Date:
RSC	22.04.2022
Project No:	Scale
2394	A1@1:50

Drawing No: PB-2394-20.04.22-SK002
Suitability: [0]
Rev:



PROPOSED THIRD FLOOR PLAN SHOWING STRUCTURE OVER

SCALE 1:50



PROPOSED ROOF PLAN SHOWING STRUCTURE OVER

SCALE 1:50

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ALL BEAMS GRADE S355.

PADSTONE SCHEDULE

PS1- 100w x 215L x 150dp CONCRETE PADSTONE

LEGEND

- METAL GRATING FLOORING OR SIMILAR APPROVED.

PARMAR BROOK

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10. All work will be carried out in compliance with the requirements of the relevant statutory authorities and regulations.
11. All structural openings setting out to be confirmed in all architects and specialists drawings. Any discrepances to be communicated to all parts, including Parmarbrook.

Rev	Date	Description	By
01	26.04.22	REVISIONS AS CLOUDED	EB

Project:
33 ELY PLACE

Title:
PROPOSED THRID FLOOR & ROOF PLAN SHOWING STRUCTURE OVER

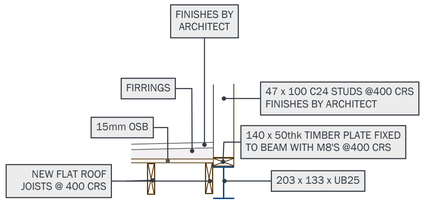
Client:
DMBA ARCHITECTS

Architect:
DMBA ARCHITECTS

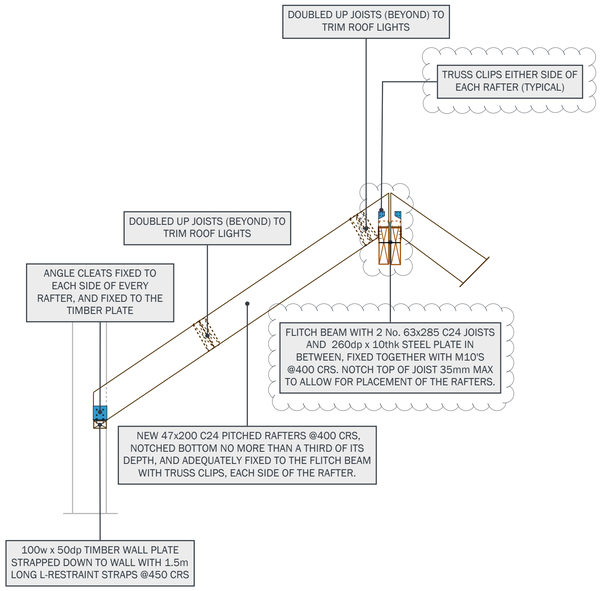
Status:
STAGE 2

Designed:	Drawn:
EB	EB
Checked:	Date:
RSC	22.04.2022
Project No:	Scale
2394	A1@1:50

Drawing No: PB-2394-20.04.22-SK003
Suitability: [0]
Rev:



SECTION G01-G01
SCALE 1:20



SECTION F02-F02
SCALE 1:20

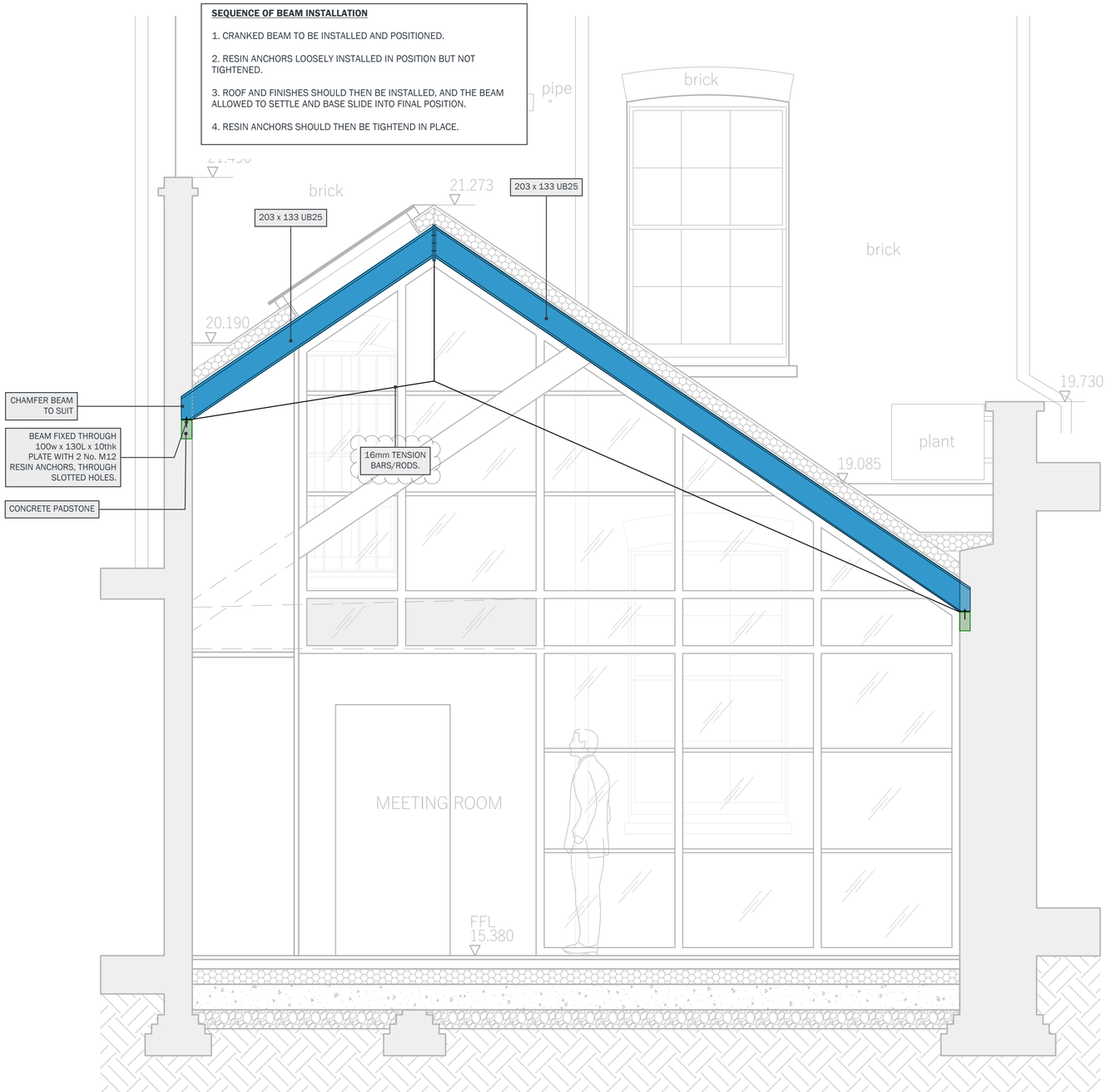
SEQUENCE OF BEAM INSTALLATION

1. CRANKED BEAM TO BE INSTALLED AND POSITIONED.

2. RESIN ANCHORS LOOSELY INSTALLED IN POSITION BUT NOT TIGHTENED.

3. ROOF AND FINISHES SHOULD THEN BE INSTALLED, AND THE BEAM ALLOWED TO SETTLE AND BASE SLIDE INTO FINAL POSITION.

4. RESIN ANCHORS SHOULD THEN BE TIGHTEND IN PLACE.



SECTION F01-F01
SCALE 1:20

PARMAR BROOK

Ground Floor, 4-8 White's Grounds, London, SE1 3LA
www.parmarbrook.com
Tel: 0207 839 3999
email: general@parmarbrook.com

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2. Do not scale this drawing, all dimensions are to be established on site and any discrepancies are to be reported to the engineer immediately.
3. This drawing is to be read in conjunction with Parmarbrook's General Notes Drawing: General Notes Number
4. This drawing is to be read in conjunction with all relevant Architect's and Services Engineer's drawings and specifications.
5. The contractor is to notify the contract administrator (c.a) of any discrepancies between this drawing and site conditions before implementing the work.
6. Details on this drawing are to be checked on site by the contractor and any discrepancies reported to the engineer so that adjustment can be made as necessary.
7. The contractor is responsible for establishing and checking the setting out of all gridlines, levels and datum's.
8. The contractor must ensure and will be held responsible for the overall stability of the building/strucutre/excavation during all stages of the work.
9. All work by the contractor must be carried out in such a way to satisfy all the requirements under the Health and Safety at work act.
10. All work will be carried out in compliance with the requirements of the relevant statutory authorities and regulations.
11. All structural openings setting out to be confirmed in all architects and specialists drawings. Any discrepances to be communicated to all parts, including Parmarbrook.

Rev	Date	Description	By
01	26.04.22	REVISIONS AS CLOUDED	EB

Project:
33 ELY PLACE, LONDON

Title:
SECTIONS

Client:
DMBA ARCHITECTS

Architect:
DMBA ARCHITECTS

Status:
STAGE 3

Designed:	Drawn:
EB	EB
Checked:	Date:
RSC	22.04.2022
Project No:	
2394	A1@1:20

Drawing No: PB-2394-20.04.22-SK004
Suitability: Rev: [1]

Parmarbrook Ltd

Ground Floor, 4-8 Whites Grounds, London Bridge SE1 3LA

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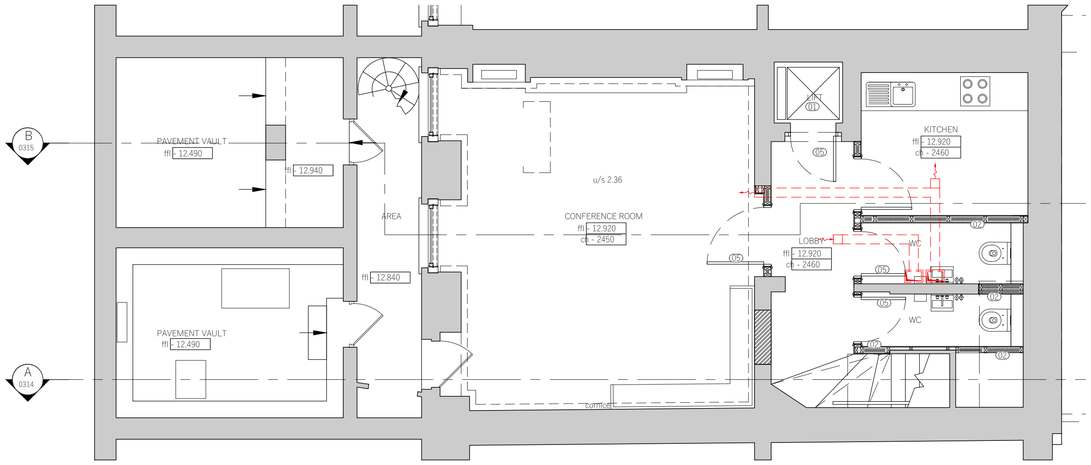
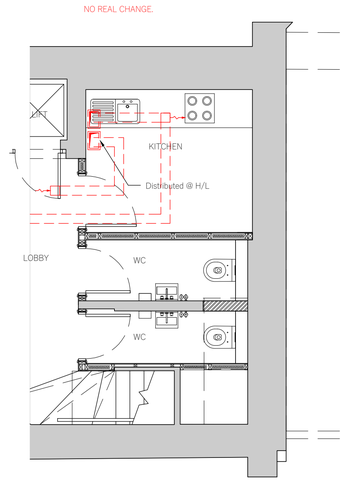
PARMAR BROOK

Appendix

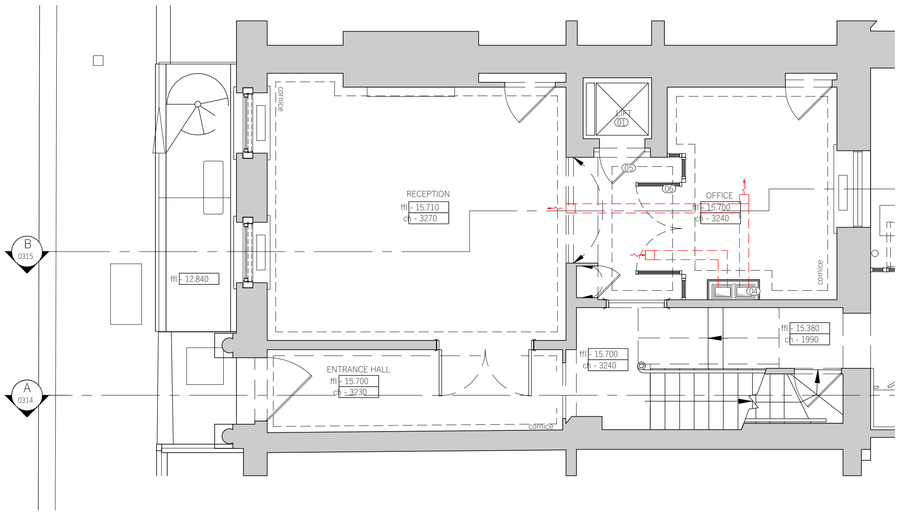
16.4 Appendix D



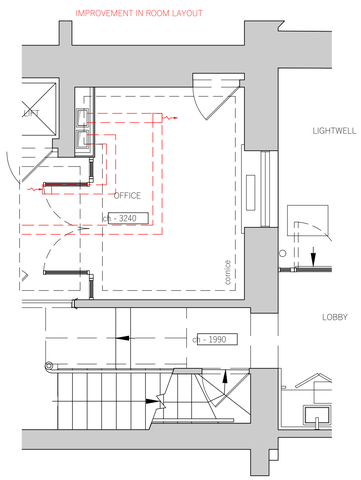
1 Proposed - Lower Ground Floor
Scale 1:50



2 Alternative - Lower Ground Floor
Scale 1:50



3 Proposed - Ground Floor
Scale 1:50



4 Alternative - Ground Floor
Scale 1:50

Scale 1:50
0m 1 2 3 4 5

N

Studio 10
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dmba.co.uk
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LEGEND

- NEW WALL (MASONRY)
- NEW WALL (STUD)
- NEW WALL (GLAZING)
- NEW WALL (EXTERNAL, RENDER)
- EXISTING MANTLEPIECE

Key Plan

Notes

1.

Rev	Date	Description	By	Chkd
PL02	22.03.22	Duct sizes revised. Issued for Planning	MH	MH
PL01	16.03.22	Issued for Planning	MH	MH
P01	28.02.22	Draft Issue For Comments	MH	MH

1. Do not scale from this drawing except for the purposes of Planning. All dimensions are in mm unless otherwise stated.
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8. All work and site procedures are to comply with CDM requirements and regulations.
9. This drawing is subject to copyright.

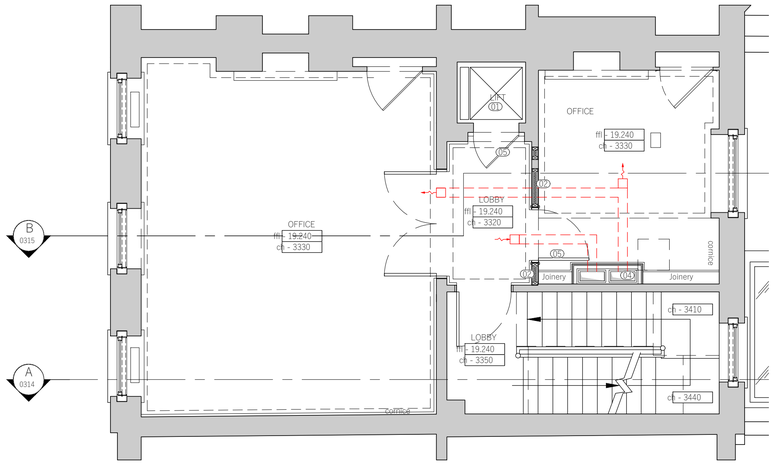
Title Riser Comparison Lower & Ground Floors

Project 33 Ely Place

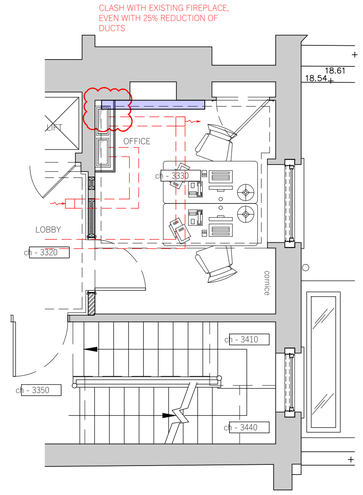
Drawing Status Planning

Scale 1:50 at A1
1:100 at A3

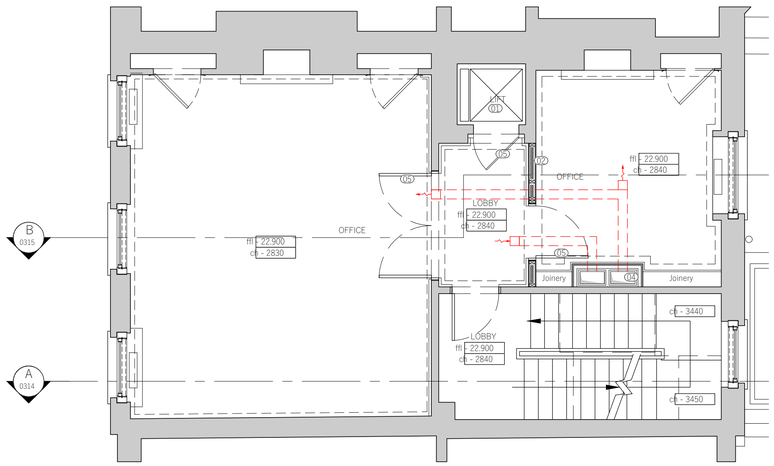
Proj No.	Drawing No.	Revision
20023	ELY-DMB-XX-XX-DR-A-0320	PL02



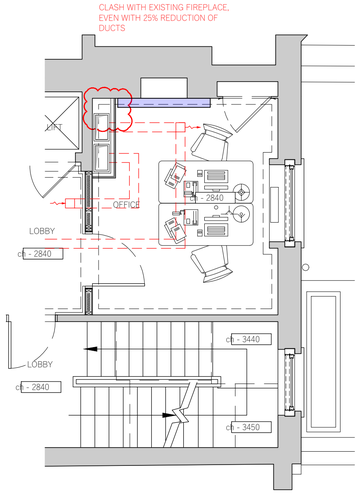
1 Proposed - First Floor
Scale 1:50



2 Alternative - First Floor
Scale 1:50



3 Proposed - Second Floor
Scale 1:50



4 Alternative - Second Floor
Scale 1:50

Scale 1:50
0m 1 2 3 4 5

N

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LEGEND

- NEW WALL (MASONRY)
- NEW WALL (STUD)
- NEW WALL (GLAZING)
- NEW WALL (EXTERNAL, RENDER)
- EXISTING MANTLEPIECE

Key Plan

Notes

1.

Rev	Date	Description	By	Chkd
PL02	22.03.22	Duct sizes revised. Issued for Planning	MH	MH
PL01	16.03.22	Issued for Planning	MH	MH
P01	28.02.22	Draft Issue For Comments	MH	MH

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8. All work and site procedures are to comply with CDM requirements and regulations.
9. This drawing is subject to copyright.

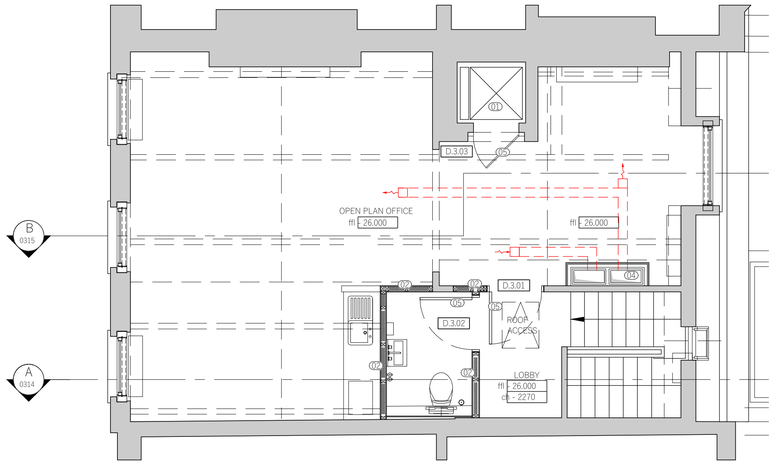
Title Riser Comparison First & Second Floors

Project 33 Ely Place

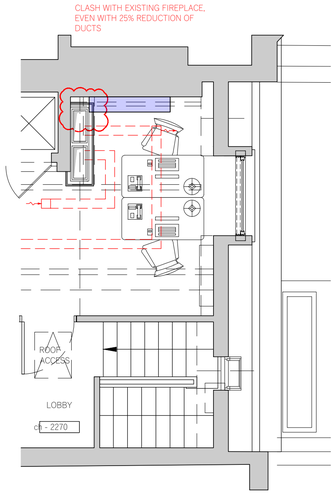
Drawing Status Planning

Scale 1:50 at A1
1:100 at A3

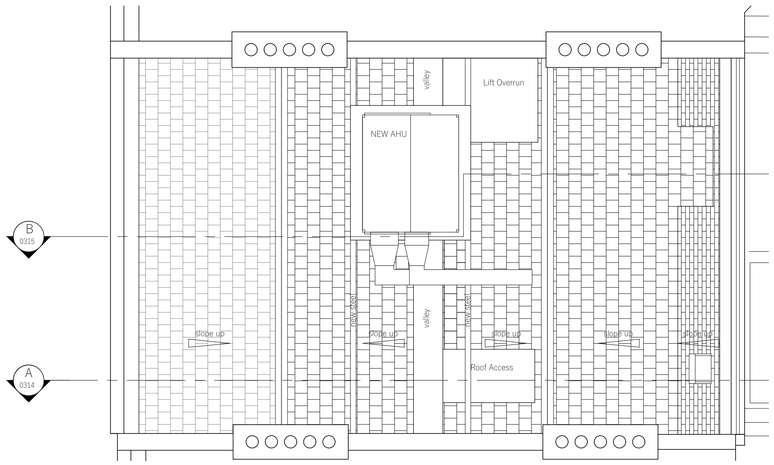
Proj No.	Drawing No.	Revision
20023	ELY-DMB-XX-XX-DR-A-0321	PL02



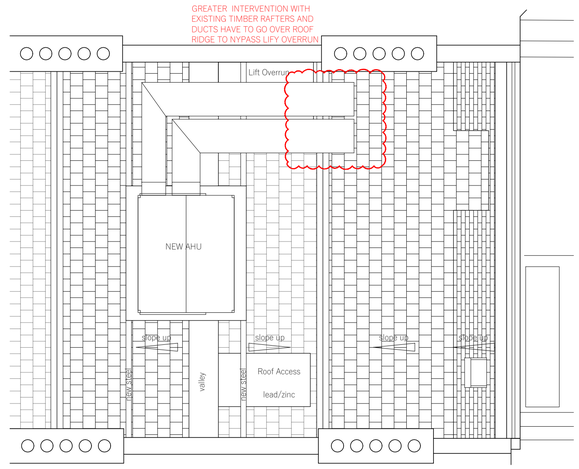
1 Proposed - Third Floor
Scale 1:50



2 Alternative - Third Floor
Scale 1:50



3 Alternative - Roof Plan
Scale 1:50



4 Alternative - Roof Plan
Scale 1:50

Scale 1:50
0m 1 2 3 4 5

N

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LEGEND
- NEW WALL (MASONRY)
- NEW WALL (STUD)
- NEW WALL (GLAZING)
- NEW WALL (EXTERNAL, RENDER)
- EXISTING MANTLEPIECE

Key Plan

Notes

1.

Rev	Date	Description	By	Chkd
PL03	11.04.22	Duct locations revised to accommodate retention of lift overrun. ISSUED FOR PLANNING	MH	MH
PL02	22.03.22	Duct sizes revised. Issued for Planning	MH	MH
PL01	16.03.22	Issued for Planning	MH	MH
P01	28.02.22	Draft Issue For Comments	MH	MH

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8. All work and site procedures are to comply with CDM requirements and regulations.
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Title: Riser Comparison Third Floor & Roof

Project: 33 Ely Place

Drawing Status: Planning

Scale: 1:50 at A1
1:100 at A3

Proj No.	Drawing No.	Revision
20023	ELY-DMB-XX-XX-DR-A-0322	PL03

Architecture & Interior Design

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