



First Street Developments Limited
Plot 10a, First Street

Ventilation Strategy

Job No: 1031414

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Latest Revision: B

Date: 20/11/2022

Project name	Plot 10a, First Street	Job Number
Report Name	Ventilation Strategy	1031414

Document Revision History

Revision Ref	Issue Date	Purpose of issue / description of revision
-	16/09/2022	Draft Issue
A	23/09/2022	Stage 2 Issue
B	20/11/2022	Issued for Planning

Document Validation (latest issue)

Revision B	Issue Date 20/11/2022	Purpose of issue / description of revision / version			
		Planning			
			Prepared by	Checked by	Verified by
		Initials	PP	RS	RS
		Signature	Przemysław Paluszyński	Richard Smith	Richard Smith

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1. Introduction

1.1 Background

This report is prepared by Cundall in support of a planning application for the development of a commercial office building on Plot 10a of the First Street Regeneration Area.

The proposals comprise a 13-storey office building, delivering just over 20,000sq m floorspace, together with new public realm completing the missing link of First Street.

This report provides details of the proposed ventilation strategy, which has been designed in accordance with the requirements of the Building Regulations Approved Document F and associated CIBSE guidance documents.

1.2 Overview

The office areas are served by Landlord plant, with primary ductwork routed within service risers located around the central core with one external wall to the north. The plant and distribution ductwork are split to reflect the potential two tenant split on each floor.

In addition to Landlord risers there are dedicated tenant risers are provided, which offer flexibility for future tenants to install additional systems as part of the CAT B fit-out, which may include comms room cooling, kitchen ventilation systems etc. If required additional CAT B fit-out ventilation will exceed available riser space, fresh air can be taken from optional louvres in north façade.

2. Ventilation Strategy

2.1 Landlord Central Ventilation Plant

Mechanical supply and extract ventilation systems will be installed to serve the building. 4 No. roof mounted air handling units (AHU's) will be provided to serve the building via a ductwork distribution system. To reduce re-circulation of fresh and discharged air, fresh air will be taken via louvre flash with plant screen and exhaust will be discharged to above. From the AHU's the ductwork will be distributed vertically, within service risers on either side of the core. Supply and extract branches from each of the main ducts will be installed to serve each floor. Variable Air Volume (VAV) boxes, controlled on the dictates of space CO₂ sensors, will control the ventilation rate to each demise.

The office floors will be served by a mixed mode ventilation system. Manually opening ventilation panels/windows will allow the building to be naturally ventilated when the external weather conditions permit. A traffic light type system is to be provided to indicate when central plant has been switched off and when tenants will be required to open the vents for ventilation and cooling of their demise. Outside air will supplied via the opening vents in the façade, with the central extract system used to provide an exhaust air path.

When the façade vents are closed the building will be ventilated by means of the mechanical systems, which have been designed to provide outside air and minimise internal pollutants. Outside air supply to office spaces will be calculated based on an occupancy of 1 person/8m² for 5 floors and 1 person/10m² for 6 floors. The occupancy per floor, 8m² or 10m² per person, will be based on future tenant requirements. 16 L/s/person is to be provided throughout the offices with additional ventilation provided to serve lift lobbies.

The landlord central plant also serves the ground floor reception.

Dedicated supply and extract toilet ventilation AHU('s) will be installed at roof level to provide a ventilation rate of 10 air changes per hour (ACH⁻¹) for the core toilets. Toilet ventilation will be on a fixed time basis during core hours, with demand-based ventilation during out of hours use.

2.2 Tenant Plant

Dedicated tenant service risers have been provided around the core, along with associated plant space at roof level. This offers flexibility for future tenants to install supplementary ventilation systems, server room DX cooling etc. as part of their CAT B fit-out.

Any future kitchen installed by a tenant will require the provision of noise and odour mitigation treatments. The scoring methodology from DEFRA 2005 'Guidance of the Control of Odour and Noise from Commercial Kitchen Exhaust Systems' will be used as a means of determining odour control requirements. Appropriate technologies may include electrostatic precipitators, ultraviolet treatment, carbon filtration or a combination of these.

Tenants will be responsible for obtaining permission for proposed ventilation systems from the Manchester City Council Environmental Health department.

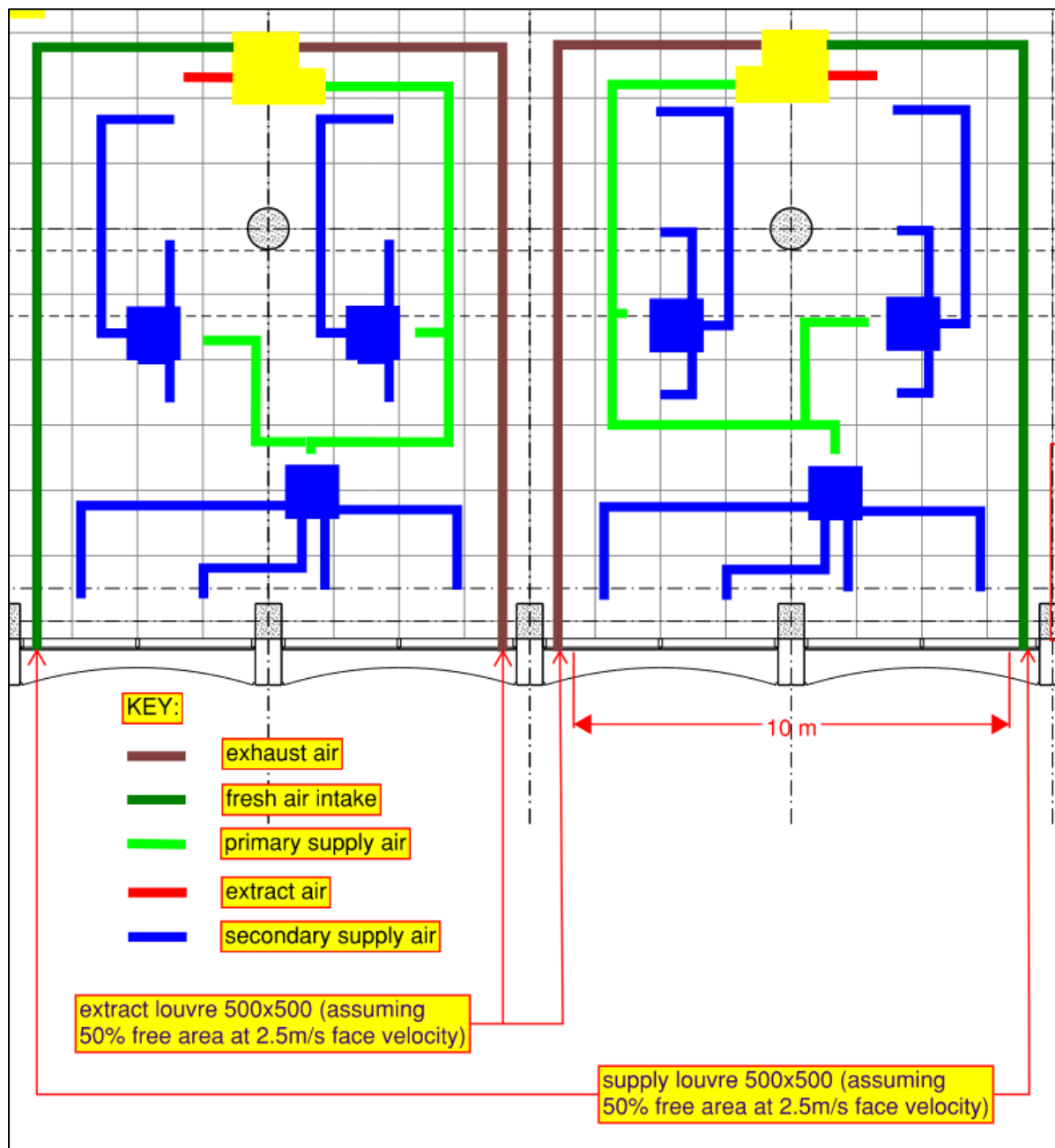
2.3 Miscellaneous

Local heat recovery ventilation units and dedicated extract fans will be installed throughout the building to serve areas such as the refuse store, plantrooms, cycle store and shower area. Louvres within the façade will typically be used as a path for supply of outside air and exhaust of vitiated air.

2.4 Alternative Office Local Ventilation Strategy

The current building has been designed to enable an alternative ventilation strategy to be implemented during the RIBA Stage 3 design. The alternative strategy would comprise of local Mechanical Ventilation Heat Recovery (MVHR) units installed on each office floor, within the ceiling void.

In this solution fresh air would be taken from outside and discharged to outside via louvres/grilles flash finished with the building façade. Louvres' location would be designed to maximise distances between fresh air intake and exhaust air discharge to avoid re-circulation. Flow rates would be assumed at the same rates as per central ventilation solution – 16 l/s/person with any floors of being occupied up to a density of 1 person per 8m².



Typical MVHR arrangement

Appendix A – Ventilation Strategy Drawings

MATERIALITY KEY:

- 01 Horizontal pre cast scalloped concrete spandrel panel articulated with a vertical groove. Acid etched finish
- 02 Horizontal pre cast concrete forming an angled crown at top. Polished finish
- 03 Vertical pre cast concrete cladding with central vertical groove. Polished finish
- 04 Metal ventilation louvres at high level. Metallic mid-dark silver finish
- 05 Capless curtain walling system. Mid-dark grey frames with clear glass infill
- 06 Capless glass to glass curtain walling system set out to a 1.5m & 3m module. Mid-dark grey frames with clear glass. Module width changes to suit full height glazing at building corners
- 07 Recessed PPC insulated metal spandrel panel behind glassmasking floor construction
- 08 Fully glazed automated powered detection curved sliding door at office entrance, incorporated into curtain walling system
- 09 Manually openable windows within curtain wall glazing system. Dark grey frames. Perforated mesh to be installed in front
- 10 Capless curtain walling system to winter gardens with automated parallel opening panels. Mid-dark grey frames with clear glass
- 11 Back painted glass in a curtain walling system, mid-dark grey frames
- 12 Glazed balustrade
- 13 Vertical metal louvre system, mid grey metallic PPC, screening external plant
- 14 Grey vertical pre cast concrete cladding, articulated with a decorative ribbed profile. Acid etched finish
- 15 Back painted glass screen concealing plant at roof level
- 16 Vertical metal louvre system. Mid grey metallic PPC with integrated service doors as part of the system
- 17 High level manual vents within Winter Garden curtain walling
- 18 Decorative anodised metal panel for solar shading with perforated pattern. Mid-dark silver finish
- 19 PPC Aluminium flashing, colour to match PPC
- 20 Anodised metal panel with decorative profile, mid-dark silver finish
- 21 Pre cast concrete plinth, Polished finish
- 22 External void above office entrance

IN ABEYANCE



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Project Name: **Plot 10a First Street**
Project No: **1033414**
Drawing Title: **Ventilation - Sections - Façade - Sheet**

Drawing No.: **FSP-CDL-XX-ZZ-DR-M-10** Rev: **P01**

Drawn By: **p.paluszynski** Date: **9/22/2022**
Checked By: Scale:
Verified By:

Project Name: **Plot 10a First Street**
Title: **Proposed Elevation (A) First Street**
Scale: **1:200 @ A1
1:400 @ A3**
Drawn: **IB** Checked: **JC** Status: **Information** Project: **105** Drawing No: **B1_04_2200** Rev: **A**

Details: **13.09.22 Issued for final Stage 2 coordination**

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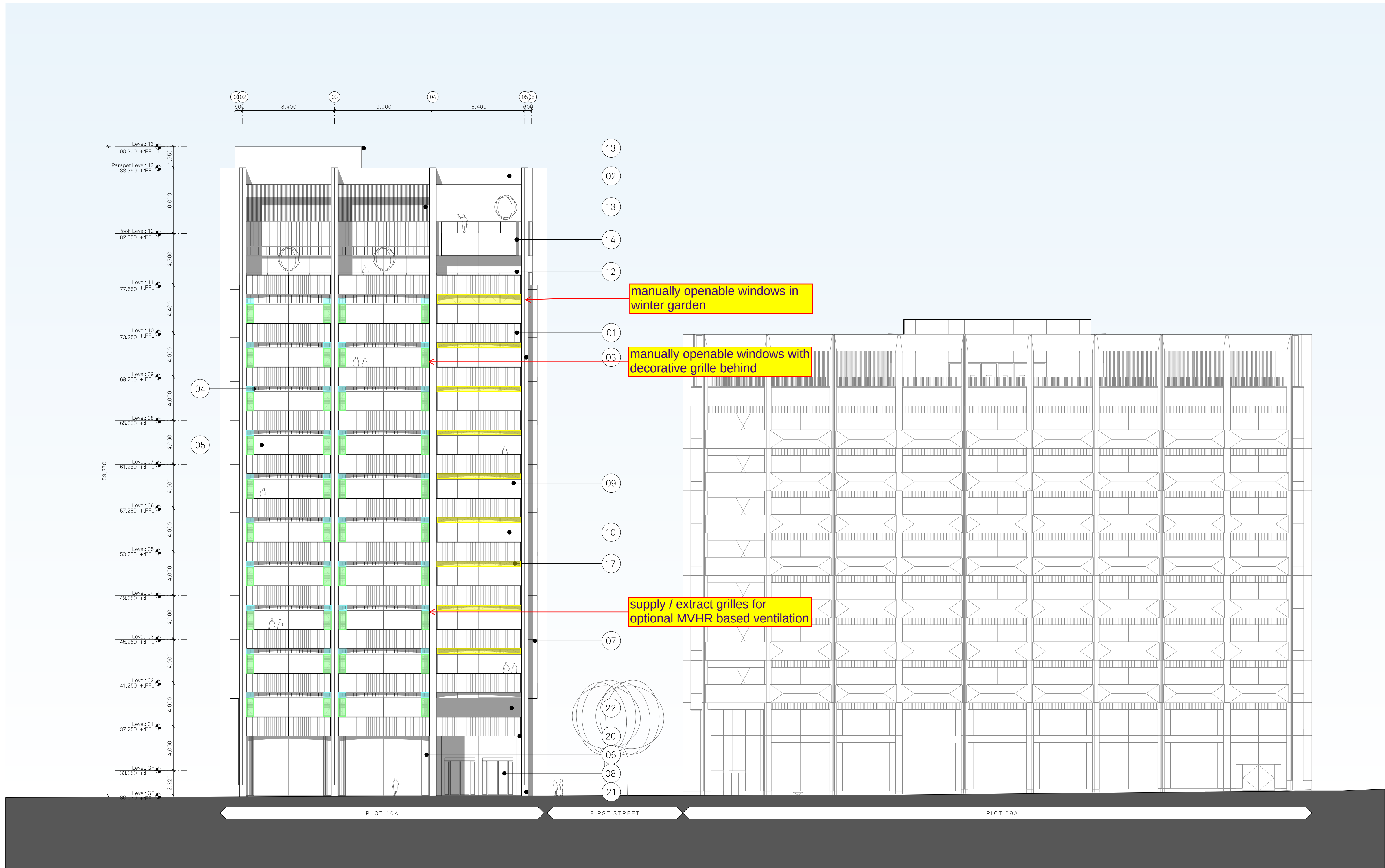
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Project Name: **Plot 10a First Street**
Title: **Proposed Elevation (B) River Street**
Scale: **1:200 @ A1
1:400 @ A3**
Drawn: **IB** Checked: **JC** Status: **Information** Project: **105** Drawing No: **B1_04_2201** Rev: **A**

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areas of louvred doors/walls to allow for supply and extract for local MVHRs, extract fans, and natural ventilation.



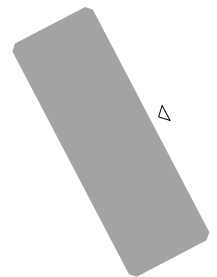
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Drawing No.: **FSP-CDL-XX-ZZ-DR-M-10** Rev: **P01**

Drawn By: **p.paluszynski** Date: **9/23/2022**
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Project Name: **Plot 10a First Street**
Title: **Proposed Elevation (C) First Street**
Scale: **1:200 @ A1
1:400 @ A3**
Drawn: **JC** Checked: Status: **Information** Project: **105** Drawing No: **B1_04_2202** Rev: **A**
Details: **13.09.22** Issued for final Stage 2 coordination

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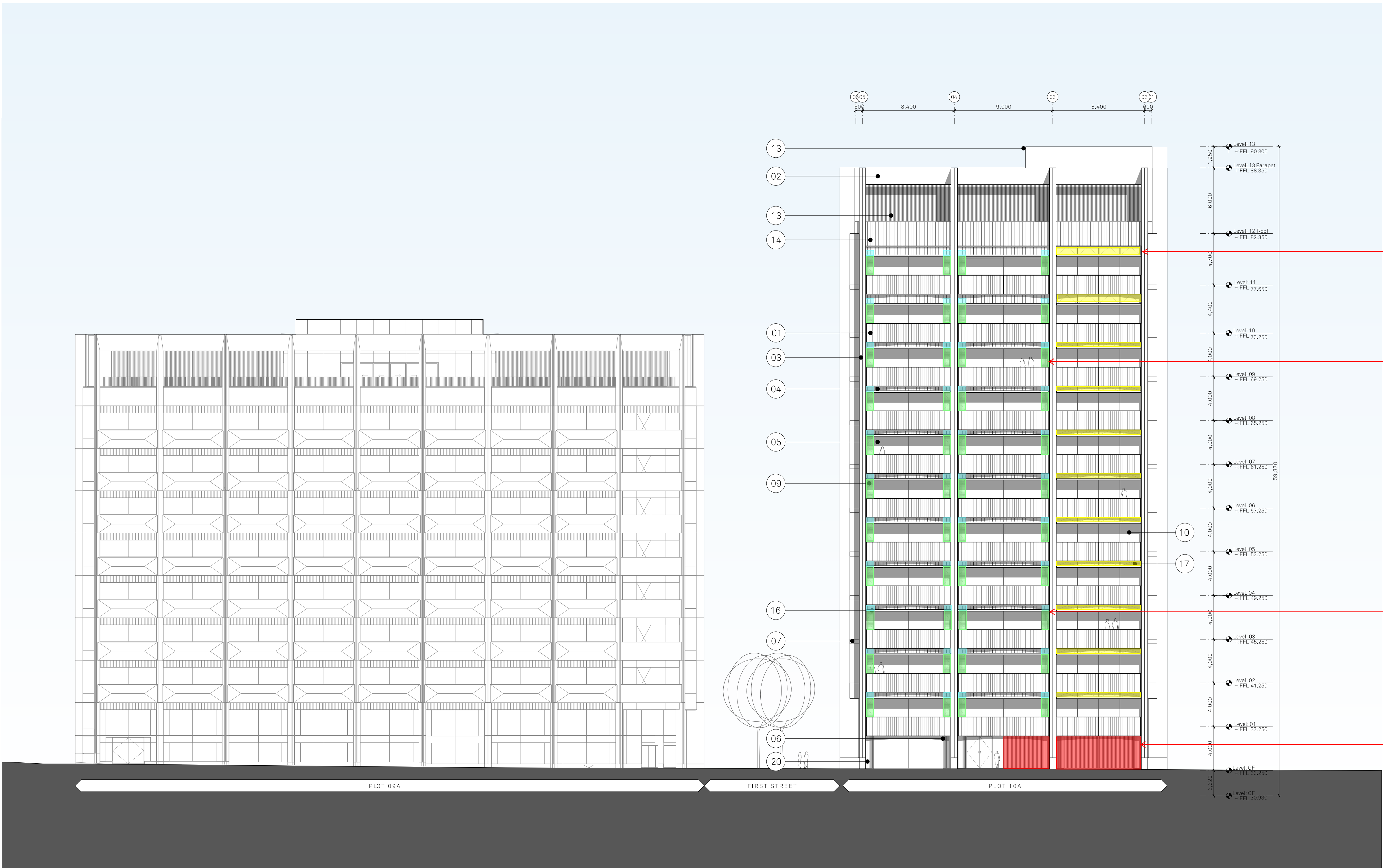
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IN ABEYANCE



manually openable windows in winter garden

manually openable windows with decorative grille behind

supply / extract grilles for optional MVHR based ventilation

areas of louvred doors/walls to allow for supply and extract for local MVHRs, extract fans, and natural ventilation.

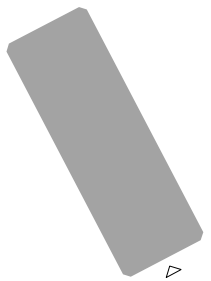
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Drawing No.: **FSP-CDL-XX-ZZ-DR-M-10** Rev: **P01**

Drawn By: **p.paluszynski** Date: **9/23/2022**
Checked By: Scale: **-**
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Notes:



Project Name:	Title:	Scale:
Plot 10a First Street	Proposed Elevation (D) Hulme Street	1:200 @ A1 1:400 @ A3
Drawn:	Checked:	Status:
IB	JC	Information
Project:	Drawing No:	Rev:
105	B1_04_2203	A

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