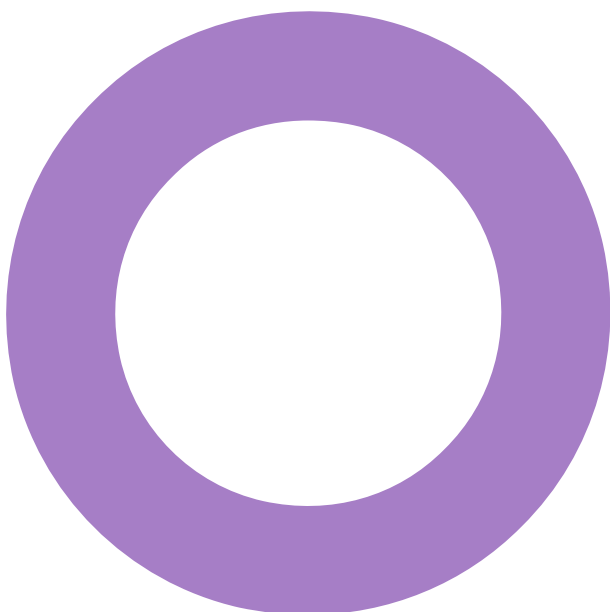


St John's Campus, Manchester. Manchester. HBD.

MEP ENGINEERING

VENTILATION & EXTRACTION STATEMENT

REVISION P03 – 28 SEPTEMBER 2023



Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
P01	17/03/2023	For Review	LW	EEG	RCM
P02	03/04/2023	For Planning	LW	EEG	RCM
P03	28/09/2023	For Planning	LW	EEG	RCM

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Project number: 04/06075

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1. Introduction

1.1 Background

This ventilation statement has been produced to support the planning application for St John's Campus, Manchester. It provides description of the supply and extract ventilations strategies employed throughout the internal areas within the proposed building, as well as the air intake and discharge strategies to external.

1.2 Development Overview

Demolition of the existing buildings and structures and the erection of a 16-storey office building (Use Class E(g)), with flexible ground floor uses (Use Class E), rooftop amenity space and works to facilitate public realm.

1.2.1 Existing Site

The existing site comprises a 4-storey building formerly occupied by The Manchester College. The building is of red brick construction with areas of glazing and panelling. The building is bound by Gartside Street to the south east, New College Street to the north east, New Quay Street to the south west and an existing NCP car park to the north west. Vacant possession of the building is anticipated in December 2022.

The site is surrounded by predominantly commercial buildings including the NCP car park, 1 Hardman Boulevard, 3 Hardman Square, buildings at Enterprise City and the new St John's neighbourhood which comprises a mix of cultural, commercial, and residential accommodation.

1.2.2 Proposed Development

The proposed development consists of a newly constructed 16-storey Class A office development, complete with rooftop amenity space, basement cycle storage and shower facilities. This shall be constructed within the existing site boundary, following demolition of The Manchester College building.

An entrance lobby and reception are present at ground floor level, with adjacent open plan amenity spaces and potential retail space at North-east of ground floor.

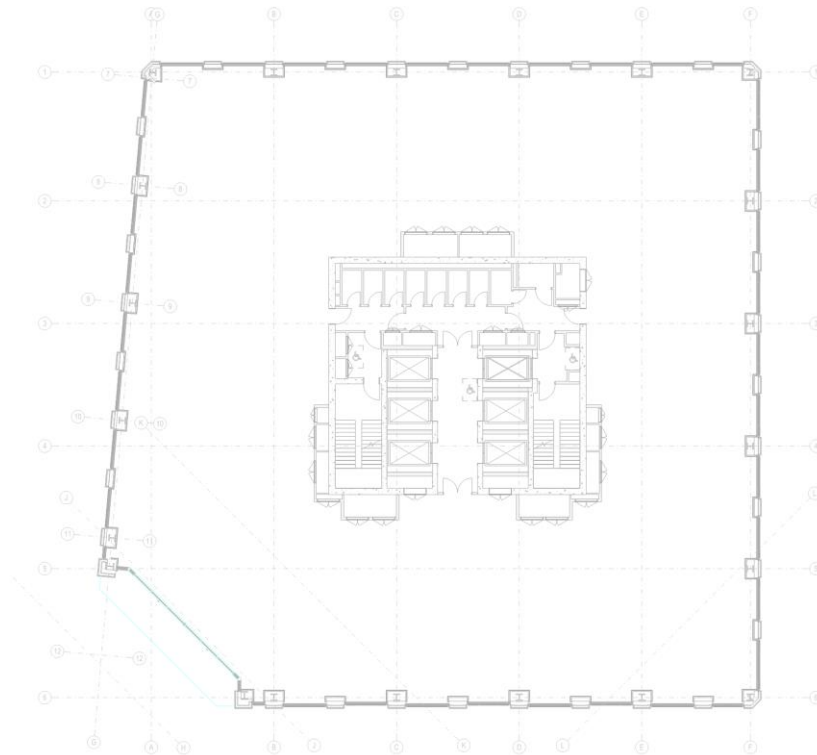
A mixed-use amenity space and external terrace is provided at level 16.

Ventilation plant space has been provided within the basement, ground floor, level 16 and roof.

2. Ventilation Strategy

2.1 Tenant Office Areas

Tenant office zones shall be provided with fresh air from central air handling units (AHU), located at roof levels 16 & 17. The variable air volume (VAV) system shall provide sufficient outside air to maintain a maximum CO₂ levels of 800ppm within the occupied zones.



Typical office floorplate

The provided AHUs will also be utilised remove vitiated air from each office zone. Air will be distributed to and from the office floor plates via ductwork located in risers within the central cores.

Heat recovery devices will be present within the AHUs to allow heat recovery required to meet Building Regulations Part L requirements. Air volumes extracted from the office zones will be variable, tracking the outside air rate to allow for a balanced system, therefore maximising heat recovery between the extract and supply air streams.

All air handling units will be provided with intake, discharge, supply, and extract attenuation with anti-vibration mounts as required to meet the requirements of the acoustic report.

4No. AHUs will be provided at roof level, each serving approximately a quarter of each office floorplate levels 01-15.

2.2 Landlord Core Areas

The landlord core areas, consisting of lift lobbies, WC and adjacent circulation will be provided with a central balanced air handling system.

Vitiated air will be extracted from the WC areas and fresh air shall be provided to the lift lobby and circulation areas, satisfying the requirements of Building Regulations Part F, whilst also providing 'make-up' air to the toilets facilitating the balanced system operation.

Air will be distributed to and from the core areas via ductwork located in risers within the central cores.

The provided AHU will contain a plate heat exchanger device, therefore mitigating the risk of cross contamination between extract and supply air streams.

The AHU will be provided with intake, discharge, supply, and extract attenuation with anti-vibration mounts as required to meet the requirements of the acoustic report.

1No. AHU will be provided at roof level, serving core areas across levels ground to 16.

2.3 Landlord Ground Floor Areas

The ground floor areas, including the amenity spaces and open plan seating areas are to be provided with full fresh air mechanical supply and extract ventilation to meet the employer's requirements and building regulations Part F.

Local heat recovery units (HRUs) will be provided to a number of zones, each connecting to high level louvres within the ground floor façade to intake and discharge air.

All HRUs will be provided with intake, discharge, supply and extract attenuation with anti-vibration mounts as required to meet the requirements of the acoustic report.

The entrance lobby and reception will be passively ventilated via the local circulating doors which shall introduce air due to frequent usage during occupied hours.

A retail unit may be provided within the north-east zone of the ground floor, and so the design allows flexibility to accommodate a prospective F&B tenant. This zone has been provided with its own localised HRU system, ducting to louvres at high level as per above. The provided HRU is currently designed to facilitate the 'day one' landlord use option, and so modifications may be required to this if and F&B tenant is introduced.

An area of the potential F&B zone has been indicated for 'prep kitchen' accommodation which would be served via the modified HRU system if introduced. It is understood that no large-scale commercial kitchens will be required in any case, and so no riser space for extraction to roof level has been provided.

2.4 Ground Floor Back of House (BoH) Areas

Plantrooms located along the façade are proposed to be naturally ventilated via external louvres.

The bin store will be naturally ventilated via external louvres, with mechanical assistance from an extract fan serving the deeper portion of the space, unreachable by natural air movement.

Plantrooms located internally are to be provide with mechanical ventilation and/or refrigerant cooling systems to mitigate risk of overheating.

2.5 Landlord Basement Areas

The basement plant rooms/stores consisting of the following areas will be provided with general extract ventilation, with supply 'make-up' air to allow sufficient air turnover to avoid overheating/humid environments:

- Sprinkler tank room
- Wet riser tank room
- Domestic water tank room
- Rainwater tank room
- Bike store

In addition, a central AHU located within the basement shall provide supply and extract ventilation to the local shower block and lift lobbies.

The systems provided at basement level shall be capable of operating in fire conditions, providing sufficient smoke clearance ventilation for compliance with Building Regulations Part B.

2.6 Rooftop Amenity Area

The rooftop amenity area shall be provided with full fresh air mechanical supply and extract ventilation to meet the employer's requirements and building regulations Part F.

Heat recovery devices will be present within the AHU to allow heat recovery required to meet Building Regulations Part L requirements. Air volumes extracted from the amenity space will be variable, tracking the fresh air rate to allow for a balanced system, therefore maximising heat recovery between the extract and supply air streams.

All air handling units will be provided with intake, discharge, supply, and extract attenuation with anti-vibration mounts as required to meet the requirements of the acoustic report.

2.7 Exhaust emissions

The building will employ diesel powered life-safety generators and pump sets, which will be operated for short periods monthly to ensure correct operation of the systems.

Flues will be routed to terminate 1M above roof level, with sufficient distance provided between the exhaust flue outlets and ventilation intakes to mitigate risk of exhaust fume circulation.



LOUIS WALKER

PRINCIPAL ENGINEER

+44 161 672 7111

louiswalker@hoarelea.com

HOARELEA.COM

Royal Exchange
Manchester
M2 7FL
England

