

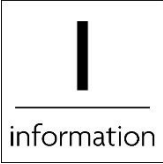
Ventilation Strategy for Alberton House

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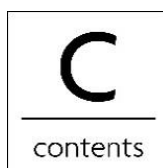
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1. Introduction

This document has been prepared by Hilson Moran to support the planning application for Alberton House, Manchester and intended to communicate the principles of ventilation strategy for the project.

The report has been structured to communicate the ventilation strategy for the various sections within the building. The Report summarises the ventilation strategies to ensure compliance with building Regulations Approved Documents B and F to maintain air quality and provide adequate occupant comfort levels.

Any impact of the surrounding buildings and accessible areas have been mitigated by the following principles:

- Use of sound attenuators incorporated within ventilation systems to comply with acoustic criteria.
- All intake points and exhaust points to have a minimum separation of 10m to comply with BREEAM requirements.
- Positioning of toilet exhausts such that they do not discharge on areas regularly occupied by people.

2. Client Brief

Alberton House is located in central Manchester, close to the River Irwell, adjacent to Cardinal House on St. Mary's Parsonage and consists of Part 12, part 4 storey office building with basement car park (20 spaces).

The project will consist of the demolition of the basement and office building with the exception of the shared staircase between Alberton House and Cardinal House, and construction of a 20 storey office led development with basement gym, ground floor café / bar (Use Class E); a rooftop amenity space including an external terrace and wellness facility, improvements to public realm surrounding the site and new loading bay and highways works.

Applicant (and client): Bruntwood RB Ltd

Application name: Alberton House

2.1. Project Requirements

The environmental building services systems will generally be designed in accordance with the British Council for Offices (BCO) Guide to Specification (2019).

BREEAM: The development is targeting BREEAM Excellent.

The office accommodation will have the flexibility of two tenancies per floor.

3. Ventilation Strategy

Outdoor air is required for respiration and to prevent build-up of odours. In accordance with the BCO Guide, fresh air to be provided at a rate of 12 l/s/p + 10% (rounded to 14 l/s/p) based on 1 person per 8m².

Occupant comfort and flexibility are essential to ventilate commercial properties, as well as optimising usable floor space. Ventilation to Both landlord and tenant area will be based on mechanical ventilation with integrated heat recovery.

3.1. General office Areas

A number of local Mechanical Ventilation Heat Recovery units (MVHR) will be installed at high level on each floor. The units will be ducted to fresh air intake and exhaust louvres at the perimeter of each floor level, allowing heat recovery from the exhaust air, minimising distribution ductwork and embodied carbon. Fresh air to provide 14l/s/p.

3.2. Entrance / Reception Area

The reception area will be naturally ventilated by the transfer of air via the main entrance revolving doors.

3.3. Basement

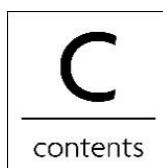
Local MVHR located at high level in the basement rooms will serve the shower/changing space with fresh air intake and exhaust via louvres on the rear elevation.

Local MVHR located at high level will serve the gym space with fresh air intake and exhaust via louvres on the rear elevation.

A separate MVHR will provide ventilation to the plantrooms and ancillary spaces within the basement.

3.4. Core Toilets

Local MVHR units located at high level within the toilet area on each floor will supply fresh air to the basin and lobby areas, and extract air from urinal and WC areas. Fresh air intake and exhaust will be via perimeter louvres with heat recovery from the extract air. Ventilation rate; Extract – 10ACH and Supply – 8ACH.



3.5. Retail Areas

Local MVHR units at high level on the ground floor will serve the retail and amenity area with fresh air intake and exhaust via perimeter louvres at that level.

Space will be provided at roof level for future kitchen supply and extract ventilation plant. The scope and nature of catering facilities not being known at this stage, any tenant will make separate and detailed submission incorporating details of any carbon and/or electrostatic filtration systems as necessary to maintain clean air requirements.

3.6. Refuse Stores

A dedicated extract system will remove air from the refuse store with supply air to the space via louvred doors.

3.7. Upper Levels

Local (MVHRs) Mechanical ventilation heat recovery units at high level to serve all leisure areas such as Event space, office, amenity/lounge, Juice bar and Spa reception. Fresh air intake and exhaust via plenum and louvres on perimeter.

Roof Air handling unit (AHU) to serve changing room/shower via supply and extract ductwork.
Ventilation rate; Extract – 10ACH and Supply – 8ACH.

Fresh air supply and extract AHU with recuperator recovery system positioned on the roof to serve Pool/pool hall areas.

3.8. Smoke Ventilation

The building includes a firefighting core which incorporates a smoke shaft. Smoke extract ventilation will be provided in accordance with the building Fire Strategy and BS:9999.

The basement will be provided with smoke extract ventilation in accordance with the building Fire Strategy and BS:9999.

3.9. Plant rooms

Ventilation of plantrooms will be via louvres in the walls on the northern perimeter. The main heat rejection plant will be installed at roof level in order to maximise plant efficiency.

4. Design Criteria

This section defines the basis of the proposed design parameters used in assessing the ventilation strategy for the development of Alberton House.

4.1. Internal Design Parameters

- Office Summer Design: 24°C +/- 2°C (No humidity control)
- Office Winter Design: 21°C +/- 2°C (No humidity control)
- Toilets: 18°C winter minimum
- Stairs: 18°C winter minimum
- Retail Summer Design: 24°C +/- 2°C (No humidity control)
- Retail Winter Design: 21°C +/- 2°C (No humidity control)

4.2. Occupancy Density

The table below outlines the assumed occupancy density for each space type.

Space Type	Occupancy Density (m ² /person)
Office	8 ¹
Retail/Restaurant Areas	5

¹ Satisfies BCO recommendations for 'High Density Offices'

4.3. Ventilation

The table below shows the ventilation rates allowed for in each space type.

Space Type	Ventilation Rate
Office	14 l/s/person
Back of House Plant	2ACH
Retail/Restaurant Areas	10 l/s/person
Retail kitchen Extract (Riser/duct allowance)	60 ACH
Refuse	10ACH
Toilets	10ACH (Extract) / 8ACH (Supply)

4.4. Noise Levels

Internal noise levels are as follows:

- General Offices: NR38 (L_{eq}) (maximum)
- Retail: NR38 (L_{eq}) (maximum)
- Toilets: NR45 (L_{eq}) (maximum)
- Reception: NR38 (L_{eq}) (maximum)