

**Proposed change of use
from betting shop to hotel
Cross Street, Manchester
Ventilation Strategy Report**

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1.0 Introduction

This ventilation strategy has been prepared by JH Partners to accompany the planning application for the proposed development which shall comprise of the change of use from betting shop to hotel lounge extension on Cross Street in Manchester.

The purpose of this report is to outline the proposed ventilation strategy for the development. The report details the current design intent related to the ventilation of the proposed building. Given the city centre location the opportunity for natural ventilation is very limited and therefore the building shall be mechanically ventilated. Where mechanical ventilation is proposed, high efficiency solutions shall be utilised in order to minimise carbon emissions.

2.0 Design Criteria

2.1 Mechanical Ventilation

The mechanical ventilation system shall be designed to meet the requirements of Part F of the Building Regulations.

2.2 Duct Sizing Parameters

Duct sizing shall be carried out using the appropriate tables in the CIBSE Guides. Sizing shall be based on the following maximum sizing parameters:

Main duct velocity	7.5 m/s
Branch duct velocity	5.5 m/s
Final run-out duct velocity	2.5 m/s
Ductwork leakage	Class A
Diffuser/grille selection	0.25 m/s terminal air velocity at the occupied zone

2.3 AHU / HRU Filtration

Mechanical ventilation systems shall incorporate Class F7 grade filtration to all supply air.

2.4 Noise Levels

Mechanical ventilation systems shall design in accordance with CIBSE Guide A.

Lounge Noise Level NR40 (45dBA)

3.0 Ventilation Strategy

3.1 General

A brief summary of the mechanical services strategy is as follows-

- The building will generally be provided with a mechanical ventilation system throughout. Individual Mechanical Ventilation Heat Recovery Units (HRU) shall be provided to serve the new lounge.
- Heating and Cooling shall be provided via several ceiling mounted fan coil units from a VRF system.

Brief summary of the proposed energy efficient measures:

- LED luminaries with PIR occupancy sensing and intelligent control
- Improved heat generation efficiencies
- Energy efficient heating equipment and controls
- Provision of heat recovery on ventilation systems and low energy fans
- Energy metering complete with Automatic Monitoring and Targeting (AM&T) as an extension of the existing system.
- Highly efficient refrigerant based heating and cooling system

3.2 Ventilation Strategy

The following is the proposed ventilation strategy for the development-

Proposed Lounge Extension

The new lounge extension will be provided with a mechanical ventilation system throughout. Individual Mechanical Ventilation Heat Recovery Units (HRU) shall be provided to supply and extract ventilation air to and from the space, conveyed via interconnecting ductwork and diffusers.

Fresh air intake grille and exhaust air louvres shall be located in the external wall positioned to ensure recirculation does not occur. The intake grille and exhaust grille will be attenuated to minimise the ingress and egress of external and internal noise respectively.

The system shall be sized to provide sufficient ventilation air based on the proposed occupancy levels.

Control over the ventilation shall be via an extension of the existing Building Management System (BMS).