



HOMETEL PICCADILLY

Mechanical Services
Ventilation and Extraction Systems
Planning
14614-WBS-ZZ-ZZ-RP-M-10001 P03

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This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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1. INTRODUCTION

This document outlines the proposed ventilation strategies for the Hometel Manchester Piccadilly Development as part of the planning application for the redevelopment of the site.

The site is located within the Manchester City Centre on the west side of Piccadilly, to the south of Piccadilly Gardens and north of Piccadilly train station. The site is located at 12 – 16 Piccadilly, Manchester M1 3AN.

The proposal comprises the conversion of the Grade II Listed Building Union Bank, including internal alterations, and the construction of a new 34 storey building on the 'gap site' which adjoins the Listed Building to form an aparthotel and associated ancillary spaces including:

- Ground floor café,
- First floor exhibition space,
- Restaurant and rooftop amenities.

The site boundary is shown in Fig 1 below:

Figure 1: Site Boundary



2. HOTEL ROOM VENTILATION

2.1 Mechanical Ventilation with Heat Recovery

The hotel rooms will be provided with a continuous mechanical ventilation with heat recovery unit (MVHR). The MVHR unit will be sized to meet the minimum ventilation requirements in accordance with Approved Document Part F of the Building Regulations. The MVHR unit will be provided with the necessary acoustic treatment to ensure noise breakout within the flat and at the external façade is within acceptable acoustic limits as set out by the acoustic consultant.

Supply air will be provided to the habitable rooms and extract will be taken from bathrooms, kitchen and utility cupboards. A boost function will be provided at the bathrooms and kitchen to enhance the ventilation for a set duration should there be an increase of steam or odour requiring removal.

The MVHR will also be provided with a summer bypass to limit overheating and humidity sensor to limit the humidity within the apartment. The MVHR will be supplying directly into the habitable space and extract from “wet”/kitchen areas via diffusers/grilles; to be developed with the architect at a later design stage.

Each hotel room will have intake and exhaust ducts routed to the external façade and terminating at a louvre. The supply and intake will be positioned as far as practical to minimise recirculation. In addition, the air intake should be positioned away from area where people may smoke to minimise the likelihood of drawing in smoke into the living space.

To prevent breaching the existing listed façade on ground to 5th floor, the MVHR units will have an intake and exhaust ducts discharging through existing flue shafts.

Figure 2: A typical residential mechanical ventilation with heat recovery unit



2.2 Kitchen Extract

Each apartment will be provided with a recirculating kitchen extract canopy. A suitably sized kitchen extract grille will be located within the kitchen area, which will connect to the MVHR system.

3. AMENITY SPACES

3.1 Restaurants and Bars

The restaurant and bars will be provided with an air handling unit to a shell and core from the base build and the ventilation system will be fitted out by the tenant. It is proposed that louvre provision will be provided above the glazing around the perimeter of the restaurant and bar air handling unit plant.

3.2 Kitchen

It is proposed the kitchen will be provided with an air handling unit to a shell and core from the base build and the ventilation system will be fitted out by the tenant. It is proposed that louvre provision will be provided above the glazing around the perimeter of the kitchen air handling unit plant.

3.3 Ground floor, Mezzanine & Level 1 amenity space

Amenity spaces will be provided with local MVHR units. It is proposed that louvres will be provided above the glazing around the perimeter of the space.

4. LANDLORD AREA VENTILATION

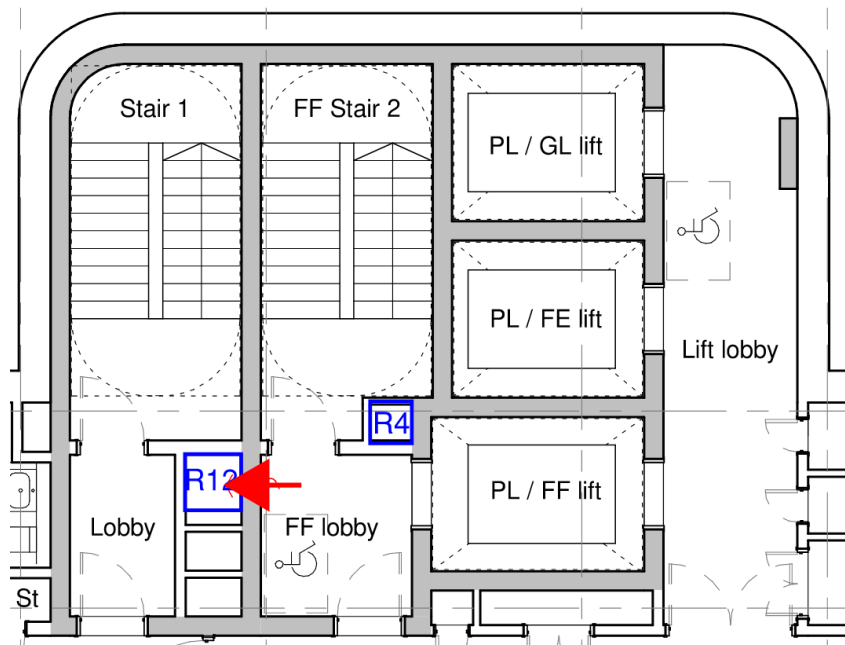
4.1 Stair Lobby Environmental and Smoke Ventilation

A smoke clearance system will be installed to provide smoke clearance from firefighting lobbies. The system will include motorised smoke dampers (MSD's) in each fire compartment for the purpose of zone-controlled smoke clearance via a proprietary smoke damper control panel located in the Fireman's entrance. The vertical builders work smoke shaft and extract system ductwork will perform the function of smoke extract only, and be 2-hour fire rated for stability, integrity and insulation (fire inside to out and outside to in).

The ductwork will be connected to dedicated axial type duty/standby exhaust fans and will exhaust at the roof level.

Make-up air will be via an automatic opening vent at the head of the stair cores (AOV) These will open in a fire condition to allow make up air supply to the staircase and Motorised Smoke Fire Damper's will be installed in the compartment walls for air transfer into each extract zone compartment.

Figure 3: Principles of the pressurisation system



4.2 Bin Store Ventilation

The bin store, located on ground level, will be provided with background ventilation. The extract fans will be selected based upon a duty standby provision. The fans will draw air in from the louvred door and exhaust shall discharge through the façade at high level.

4.3 Basement Plantroom Ventilation

The basement level will be provided with a dual extract system which will provide both normal and smoke clearance. The intakes and exhaust will be located at ground floor.

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