

Paddington Green Police Station
2 – 4 Harrow Road, London, W2 1XJ

Ventilation Statement

WSP

30/03/2021



Berkeley Homes (Central London) Limited

PADDINGTON GREEN POLICE STATION

Ventilation Statement





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QUALITY CONTROL

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1 INTRODUCTION

WSP has been commissioned by Berkeley Homes (Central London) Limited to produce a ventilation strategy for the proposed development at Paddington Green Police Station (PGPS), London. The Site is located in an area under the jurisdiction of Westminster City Council.

The ventilation strategy will comply with the following current regulatory requirements, standards and good practice guidance:

- Building Regulations 2010 – Approved Documents F
- Building Regulations 2010 – Approved Documents L
- CIBSE Guide B
- DW/144
- DW/172
- BCO Guidelines

The ventilation strategy for PGPS shall not result in any adverse impacts to neighbouring developments including from an odour and acoustic perspective.

2 VENTILATION STRATEGY

2.1 APARTMENT VENTILATION

Each apartment shall be provided with a dedicated mechanical heat recovery unit (MVHR) designed in accordance with AD Part F whole dwelling ventilation System 4.

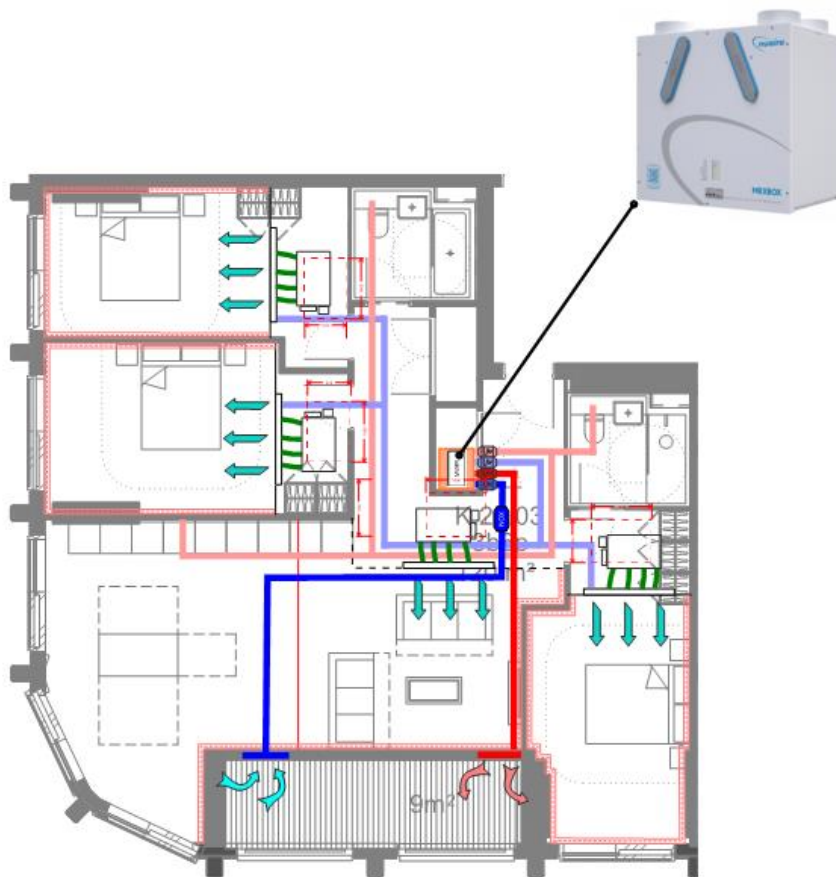
Ventilation air volumes shall be compliant with the requirements of Part F of the Building Regulations. Ordinarily the MVHR shall run continuously in accordance with Building Regulations Part F.

Extract air shall be from bathrooms, kitchen areas and utility cupboards. Fresh air shall be supplied to all bedrooms and living rooms areas.

Intake/Exhaust ventilation to serve the MVHR shall connect to dedicated façade connection. An architectural louvre band shall be provided on all floors. Air volumes will be developed in subsequent design stages.

Intake and exhaust louvres shall be appropriately separated from each other and neighbouring apartments.

Kitchens shall be provided with recirculation hoods.



VENTILATION LAYOUT

2.2 RESIDENTIAL FIREFIGHTING LOBBY SMOKE EXTRACT

Smoke ventilation will be provided for each firefighting core in line with the fire strategy.

A push/pull ventilation arrangement shall serve each protected lobby. Dedicated smoke extract fans will be located at roof level, forming part of a typical mechanical smoke ventilation system, with dual redundant fans, rated for high temperatures. Automatically operating vent panels will be installed to vent the firefighting lobby, to be activated on detection of fire on that floor.

Smoke fan shall only operate during testing and a fire scenario.

Fans shall terminate at roof level.

Refer to commercial section for smoke strategy to these areas.

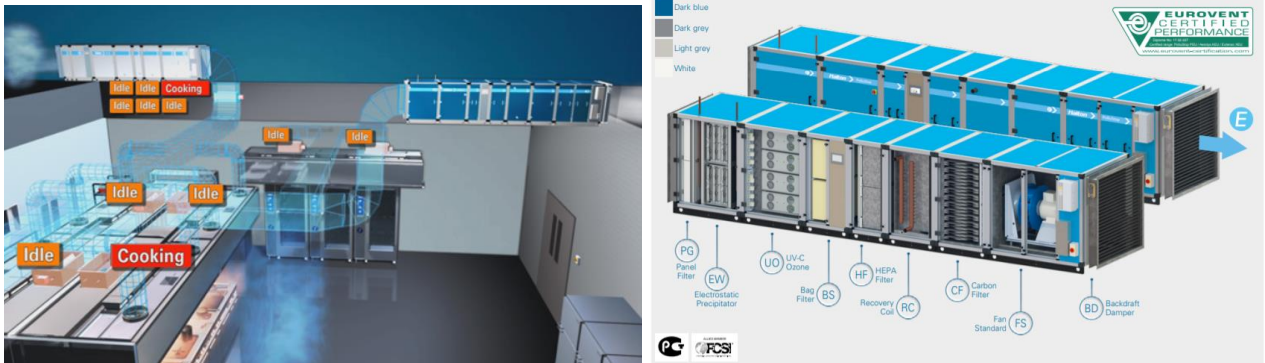
Lift lobby smoke ventilation shafts shall be used during normal mode for environmental control to mitigate corridor overheating. Dampers shall rotate to ensure floors have sufficient air change for removal of heat. The roof mounted plant comprises a DX coil to provide the necessary cooling provision. The DX coil shall be reversible to enable heat input if required by SAP calculations. A MSFD arrangement shall enable switch over between normal mode and smoke mode.

2.3 RETAIL VENTILATION

The current retail provision at Paddington Green Police Stations is to be developed at the subsequent stages.

Local façade connection shall be provided for independent MVHR and ventilation plant to serve each retail space.

Should any catering facilities be required this shall comprise of a high filtration air handling ecology unit.



Make-up air will be provided by means of a dedicated supply fan.

High filtration AHU plant includes multiple levels of filtration and air purification to enable low level discharge within public realm areas.

Subject to the type of catering offered, this filtration typically includes the following:

- UV treatment in kitchen canopies for grease management
- Bag filters for particulate capture.
- Panel filters for particulate capture.

- HEPA filtration for smoke management.
- Carbon / charcoal filtration for ozone management.

2.4 BASEMENT/CAR PARK VENTILATION

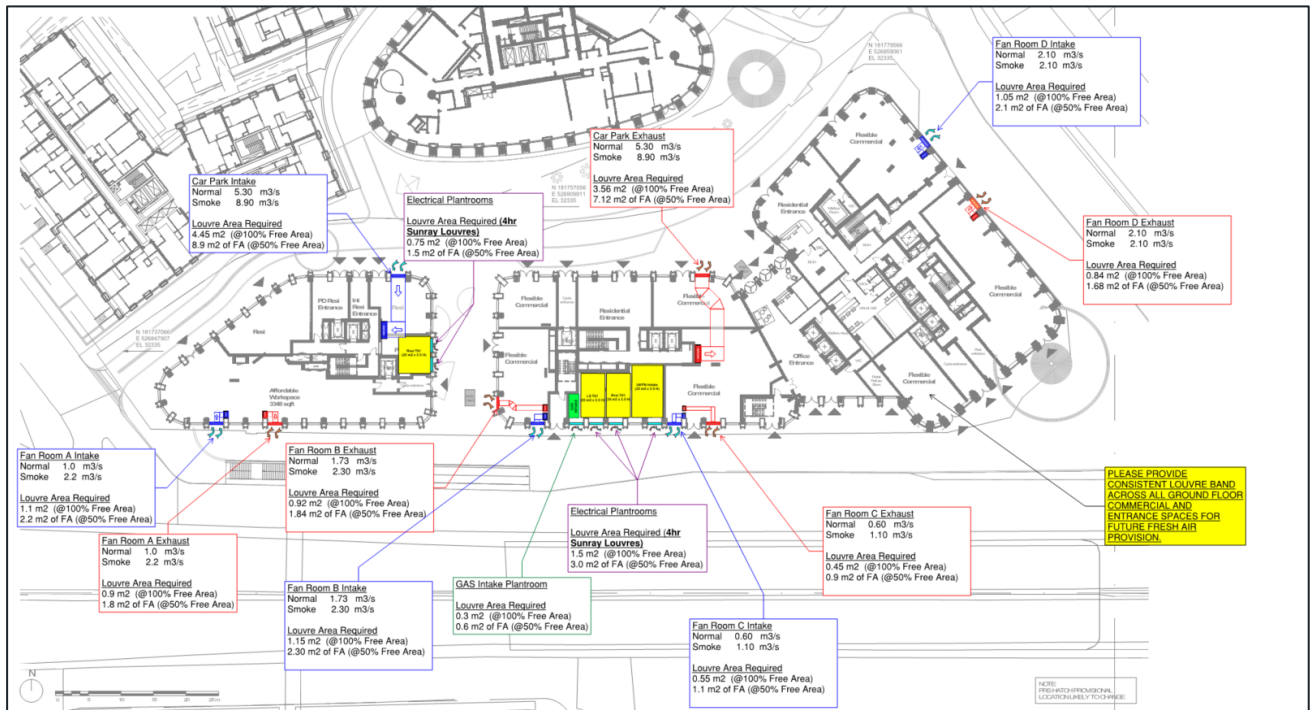
Ventilation will be provided to basement areas in accordance with the PGPS Fire Strategy. Zonal smoke control shall be provided. PGPS basement ventilation shall be separated from WEG basement ventilation system via shutters.

Smoke extract from the rooms will be achieved by utilising the general extract ductwork system and dedicated smoke extract fans. The ductwork shall be fire rated and utilise MSFDs to change over the flow between extract fan sets (from normal basement extract fans to the smoke extract fans).

All basement ventilation systems shall comply with BSEN 1366. All ductwork shall be fire rated.

During smoke extract all systems will extract at 10 AC/H (zonal control).

Basement ventilation systems shall vertically route to ground floor and terminate at high level in dedicated louvre provisions. Active frontage shall be maximised.



2.5 WASTE STORE VENTILATION

The waste storage areas within the building will be provided with supply and extract air at a rate of 6 ACH⁻¹ to ensure sufficient odour dilution is achieved. Under fire scenario the waste rooms will extract at a rate of 10 ACH⁻¹.

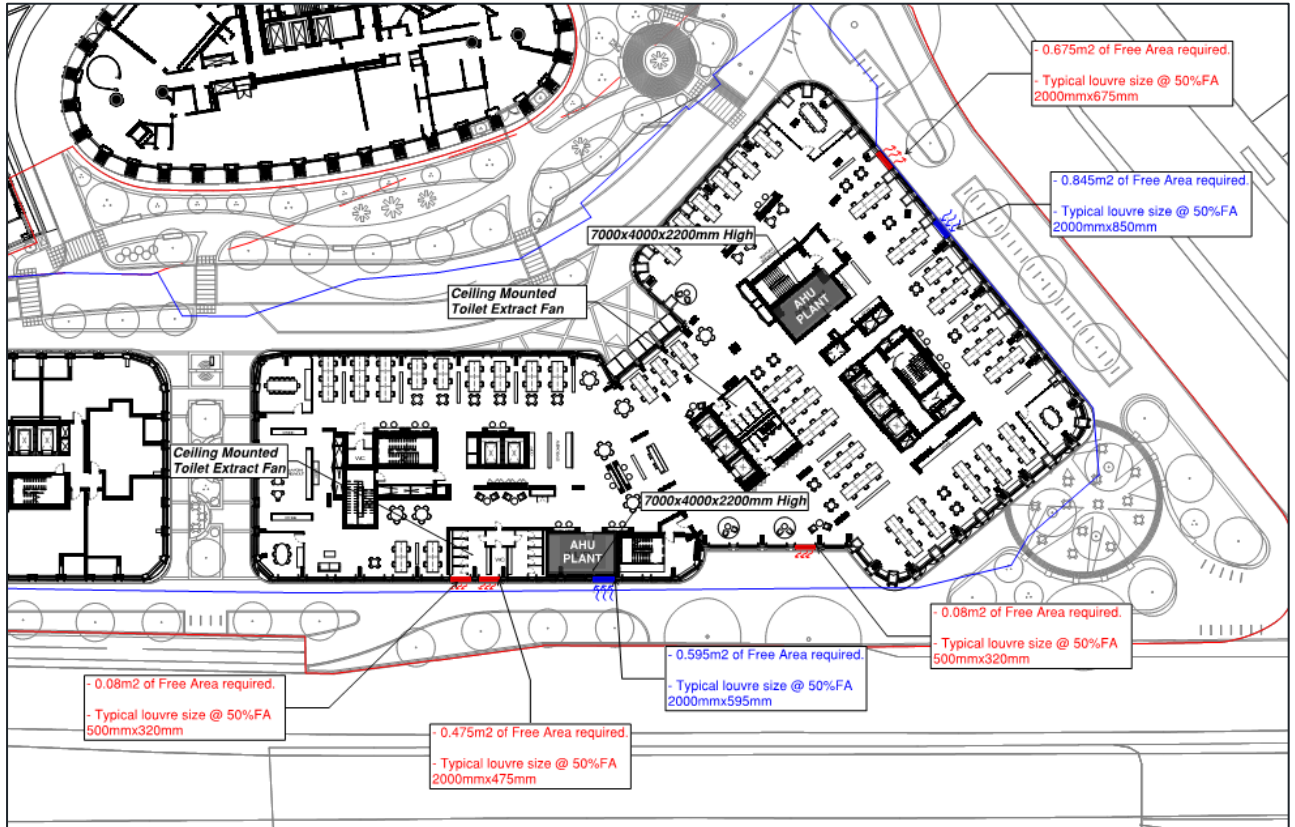
2.6 OFFICE/COMMERCIAL VENTILATION

Air handing units (AHU) and other ventilation plant shall be located on each respective office floor. 1 No. AHU plant room shall be provided per tenancy (4No. in total). Dedicated intake/exhaust louvres shall be provided for on floor plant. Refer to sketch below.

AHU plant shall be sized in accordance with BCO guidelines in terms of occupancy density and fresh air rates (l/s/p).

AHU plant shall be provided with inverter fan control, heat recovery thermal wheels and inline attenuation. Filtration grade shall be subject to the Air Quality assessment. Filtration shall be compliant with BS EN ISO 16890:2016.

AHU plant shall be acoustically attenuated in accordance with local noise requirements.



Smoke ventilation will be provided for each firefighting core in line with the fire strategy.

Dedicated smoke extract fans will be located locally within the podium levels forming part of the mechanical smoke ventilation system, with dual redundant fans, rated for high temperatures.

Automatically operating vent panels will be installed to vent the firefighting lobby, to be activated on detection of fire on that floor. Smoke fan shall only operate during testing and a fire scenario.



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