



**VENTILATION STRATEGY  
for  
160-161 DRURY LANE  
LONDON  
WC2B 5PN**

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## 1. Introduction

160-161 Drury Lane is a ground plus four storey office building arranged. The existing building comprises ground plus four storeys; three masonry upper floors and a panel clad fourth floor.

The back of the existing building forms part of the enclosure to a shared external courtyard. A number of listed buildings located on the north side of Great Queen Street back onto this courtyard. The design proposal has had regard to its affect on these heritage assets.

The existing building has a mixed use ground floor comprising two retail units (A1 & A3), a stand alone office unit (B1) and ancillary office space (B1) serving as an entrance lobby to the upper floors (B1).

Palmyra Property investments limited. (the client), have appointed Ian Chalk Architects Ltd. (the architect), to develop a design towards the submission of a planning application to the London Borough of Camden.

## 2. Development Proposals

Development proposals for 160-161 Drury Lane are to provide up to two additional storeys of office (B1), a small first floor rear extension (B1) and a reconfiguration of the ground floor. The design also proposes a full re-clad of the ground and fourth floor, to better address the local character and building typology.

The main building is almost rectangular in plan, save for a small extrusion to the rear, which climbs from first to third floor level, atop a larger ground floor base.

An oversized fire escape stair climbs the rear elevation, from a first floor roof terrace (above the ground floor rear extrusion) to a fourth floor terrace, at the rear of the building. The external stair provides a secondary means of escape but has a significant impact on the perceived mass, as well as daylight levels in the shared courtyard.

A small over-run at roof level accommodates the lift motor room and additional plant. This is located approximately central to the length of the plot and is aligned with the rear elevation. Due to its location, the over-run does not have a significant impact on the local townscape.

The existing building is predominantly office use with some retail and ancillary office space at ground floor level. The corner of the Ground Floor shall be flexible A3/A1/B1 use requiring a Kitchen extract system to be installed. This is described here.

## 3. Ventilation

A ceiling mounted MVHR ventilation system shall be provided in each office floors in accordance with system 4 of Building Regulations Part F. The MVHR units shall be located in each office floors above WC ceiling void, the intake and exhaust ducted through external wall. This will be provided with mechanical heat recovery ventilation at a rate to suit the occupants. The ventilation system/s shall operate to the dictates of a timeclock and provide variable volume ventilation on the basis of air quality control.

The potential kitchen fresh air supply and restaurant extract shall be drawn from the Façade Louvres. The air handling unit serving the restaurant shall be of the heat recovery type utilising a high efficiency plate heat exchanger, with air filtration being provided on both the air intake and extract. The air handling unit is likely to be a MVHR type unit located within the Tenanted area but will be as part on the Tenants Fit out.

#### 4. Welfare Facilities

The Welfare Facilities ventilation supply and extract shall be drawn from the Façade Louvres. The air handling unit serving the welfare facilities shall be of the heat recovery type utilising a high efficiency plate heat exchanger, with air filtration being provided on both the air intake and extract. The air handling unit is likely to be a MVHR type unit located within the Tenanted area but will be as part on the Tenants Fit out.

#### 5. Kitchen Type Extract

A commercial kitchen extract system will be installed from the commercial kitchen. The kitchen ventilation system will be designed in accordance with the industry standard design guidance outlined in HVCA 'DW/172'.

Should the unit be operated for A3 use, the kitchen area shall be provided with an extract duct rising to roof level. Make up ventilation being provided both directly to the space and via air transfer grilles from the general area.

The main kitchen extract system will comprise of one or more stainless steel extract canopies located above the heat and moisture generating equipment which shall include, but may not be limited to, conventional and steam ovens, open and solid top ranges, fryers, griddles, salamanders (grill) and Bain Marie (water bath).

The extract canopies shall be manufactured from 304 Grade stainless steel, with external dull polish grain, and shall incorporate removable/ washable stainless steel baffle type filters which are highly efficient at grease removal.

The kitchen extract system shall be provided with high efficiency smoke and odour filtration by use of 2No inline electrostatic particle (ESP) filters and extra duty 400kg Carbon filters, providing a dwell time of 0.4 seconds.

Note: Odours would be expected to be reduced by up to 98% from a system incorporating the proposed ESP and carbon filters. If the developed kitchen design incorporated a char-grill, the ESP filters will be revised to double pass ESP units at no more than 85% of maximum design volume. Should further deodorisation be required additional equipment could be added.

Air extracted from the kitchen shall be discharged to atmosphere from the vertical duct which shall terminate via a conical duct approximately 1m above roof level.

The discharge terminal to atmosphere shall be of the open type incorporating a venturi or accelerator cone to achieve an efflux velocity of between 12m/s and 15m/s to aid in the dilution and dispersal of any remaining odours by the prevailing wind.

The base of the kitchen extract duct riser shall be provided with a suitable drain.

The Vertical Duct to be provided with Cleaning Access panels at each floor accessed via fire rated and sealed riser cupboards.

Each kitchen extract canopy may be fitted with an automatic fire suppression system.

Fresh air make up to the kitchen shall be provided directly by tempered fresh air ventilation system located at within the demise and transfer from adjoining areas.

The mechanical ventilation system shall be interlocked with the kitchens gas safe system ensuring that the kitchens gas is automatically isolated when either the kitchen extract or fresh air make up systems are not operating.

The kitchen extract fan shall be located at top floor level off the office floor. The unit shall be complete with attenuators and be located in a fire rated and acoustic riser cupboard. It is likely this will be comprised double set of doors all to aide access for maintenance.

**6. Noise Levels**

Attenuators will be provided in accordance with the Acoustic Report prepared as part of the Planning Application.

**7. Conclusion**

The ventilation equipment proposed will be attenuated. If this has been assessed in the noise assessment submitted with this application.