

PALL MALL DEVELOPMENT, LIVERPOOL

PLOT A

FLUES, EXTRACTION AND VENTILATION

1.0 GENERAL

This note sets out the principles to be adopted to incorporate flues, for the discharge of the products of combustion, ventilation and air extraction.

2.0 FLUES

Boiler plant to generate heat for space heating and hot water production is to be located in a roof plantroom. The boiler plant is to be fired by natural gas and the products of combustion are to be discharged via two flues, each approximately 300 mm in diameter which are to project circa 1.0 m above the roof of the plantroom.

3.0 VENTILATION

3.1 Office Accommodation

Ventilation air is to be introduced into the building at roof plantroom level by way of air inlet louvres. Similarly, exhaust air from the building is to be discharged to outside, also at roof level, via discharge louvres.

Noise from fans is to be attenuated, as necessary, to suit any Planning Conditions and environmental health requirements.

3.2 Retail Accommodation

The retail accommodation at Ground Floor level is to be fitted out by the respective incoming tenant.

It is anticipated that at least one of the retail units will become a restaurant. In this event, the future ventilation systems are to be designed and installed by the tenant. Extract ventilation air from a commercial kitchen is to be discharged to outside via louvres at high level within the Ground Floor tenancy.

The extract air from the kitchen is to be treated before it is discharged to outside by way of the following stages of filtration:

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| Stage 1 | Air is passed through conventional grease filters that are mounted above the cooking range. |
| Stage 2 | Air is passed over an Electrostatic Particulate (ESP) filter array to eradicate oil, grease and smoke particles. |
| Stage 3 | Air is exposed to ultra-violet light to neutralise odours. |
| Stage 4 | Air is passed over carbon filters to absorb any residual odours. |

The resulting outgoing airstream is clean and thus suitable for discharge at Ground level without causing nuisance to pedestrians. Where necessary, ventilation fans will be attenuated to ensure that noise levels external to the new development are maintained below acceptable environmental standards.

The foregoing strategy is preferable to discharging kitchen exhaust air at roof level. A roof level arrangement would necessitate the installation of a kitchen extract duct (or ducts) rising through seven storeys of office accommodation. This/these ducts would need to be fire proof and would need regular access for periodic cleaning at each storey level of the new development. This would represent an unwelcome addition to the planning of the core of the office accommodation, would be more complex to operate (the restaurateur would need access to the offices to periodically clean the ductwork) and there would be an additional fire hazard running through the office accommodation.

3.2 Basement Ventilation

The basement car parking facility is to be mechanically ventilated to control vehicle pollution and to provide smoke ventilation in the event of an outbreak of fire. The ventilation proposals are based on providing extract ventilation where the volumetric capacity of the exhaust airstream is controlled by carbon monoxide sensors in the car park.

In terms of extraction, there will be a jet of exhaust air discharging at a level equal to the high level of the Ground Floor of the proposed building. The jet will discharge into Bixteth Street during periods when the carbon monoxide levels in the car park are high. This is expected to occur when vehicle movements in the car park are correspondingly high as might occur at the beginning and end of a typical working day. At other times, vehicles are expected to be at rest and emissions in the car park will be low or nil. When this is so, the ventilation system will either be at rest or running at approximately 25% of its maximum capacity. This, in turn, causes the exhaust air jet at the point of extraction into Bixteth Street to be reduced in size.