



Environmental Associates

Odour Risk Assessment

764-786 Stockport Road, Manchester

February 2022

VIEWS (Holdings) Limited



Odour Risk Assessment

764 – 786 Stockport Road, Manchester

Client: VIEWS (Holdings) Ltd

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Report Version	Prepared By	Reviewed By
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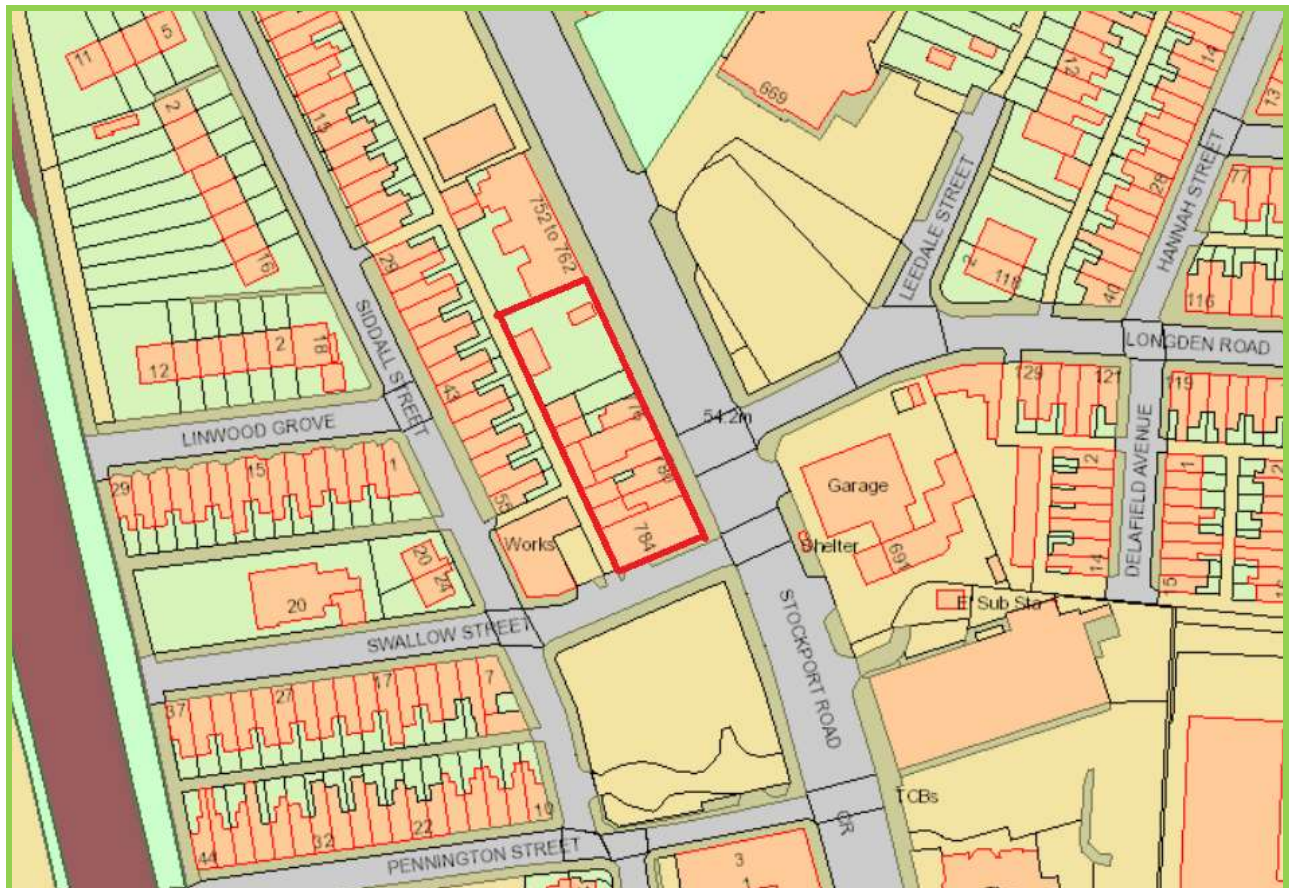
APPENDICES

Appendix 1 Wind Data

Appendix 2 Extraction Design

1 INTRODUCTION

- 1.1.1 NJD Environmental Associates was instructed by VIEWS (Holdings) Limited to undertake an odour risk assessment in support of a mixed use residential and commercial development at 764-786 Stockport Road.
- 1.1.2 The site location is provided below in Drawing 1.



Drawing 1: Site Location

- 1.1.3 The proposed scheme is as follows:
- 30 apartments – on 3 upper floors; and
 - 9 ground floor retail units, of which the developer is seeking consent to use up to 50% of the floor space as restaurant use.

1.2 Scope

- 1.2.1 An odour risk assessment has been prepared, to consider the potential odour impact associated with a commercial kitchen extraction system for the proposed restaurant use on the ground floor.
- 1.2.2 A desk-based odour risk assessment has been undertaken in accordance with the Institute of Air Quality Management "Guidance on the Assessment of Odour for Planning" and Defra's revised "Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems", issued by EMAQ.

2 LEGISLATION AND POLICY

2.1 Environmental Protection Act

- 2.1.1 This Act defines statutory nuisance relevant to odour as follows:

"Any dust, steam, smell or other effluvia arising from industrial, trade or business premises or smoke, fumes or gases emitted from premises so as to be prejudicial to health or a nuisance."

- 2.1.2 Where the local authority is satisfied that a statutory nuisance exists, an abatement notice must be served. Failure to comply with an abatement notice is an offence and if necessary, the local authority may abate the nuisance and recover expenses.

2.2 National Planning Policy Framework

- 2.2.1 The National Planning Policy Framework (NPPF) sets out planning policy for England and promotes sustainable development. One of the core planning principles is that planning should *"contribute to conserving and enhancing the natural environment and reducing pollution"*. Pollution is defined as:

"Anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health, the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light".

3 ASSESSMENT METHODOLOGY

3.1 Guidance on the Assessment of Odour for Planning

- 3.1.1 The Institute of Air Quality Management's "Guidance on the Assessment of Odour for Planning" is used to assess odour impact during the planning process. The guidance is limited to assessing the effects of odour on amenity, not on health.
- 3.1.2 The guidance refers to the three links which are required to be present in order for an odour effect to occur: **Source-Pathway-Receptor**. The scale of the impact is determined by the parameters collectively known as the FIDO factors (Frequency, Intensity, Duration and Offensiveness). The magnitude of the effect is dependent upon the scale of the impact (exposure) and the receptor sensitivity as shown in Table 1.

Table 1: Likely Magnitude of Odour Effect at Receptor Location			
Risk of Odour Exposure	Receptor Sensitivity		
	Low	Medium	High
High Risk	Slight Adverse Effect	Moderate Adverse Effect	Substantial Adverse Effect
Medium Risk	Negligible Effect	Slight Adverse Effect	Moderate Adverse Effect
Low Risk	Negligible Effect	Negligible Effect	Slight Adverse Effect
Negligible	Negligible Effect	Negligible Effect	Negligible Effect

- 3.1.3 The EIA regulations require an assessment to reach a conclusion on the likely significance of the predicted effect. In accordance with the IAQM guidance, where the overall effect is greater than 'slight adverse', the effect is likely to be considered significant. Concluding an effect is significant should not mean however, that a development is unacceptable, merely that careful consideration needs to be given, and the balance with any wider benefits the proposal would bring.

3.2 Control of Odour and Noise from Commercial Kitchen Exhaust Systems

- 3.2.1 This guidance document, originally issued by Defra in 2005, aims to ensure that appropriate equipment and techniques are employed to minimise the impact of commercial kitchen exhaust systems. It was withdrawn in September 2017 as it was seen to be out of date. EMAQ, providers of training and technical guidance, have since updated the guidance and reissued in September 2018.

3.2.2 The guidance provides a risk assessment approach which has been used to determine the level of odour abatement likely to be required for the proposed kitchen extraction system, based on the score methodology provided.

4 ODOUR RISK ASSESSMENT

4.1 IAQM Guidance

Source Odour Potential

4.1.1 In accordance with the IAQM guidance, the first step in the assessment is to estimate the odour-generating potential of the sources being considered, taking into account the following three factors:

- The scale (magnitude) of the release from the odour source taking into account the effectiveness of any mitigation measures in place;
- How odorous the emission is; and
- The relative pleasantness/unpleasantness of the odour.

4.1.2 Table 8 of the guidance provides an example risk ranking of the source odour potential which is then categorised as small, medium or large.

4.1.3 Table 2 below summarises the source odour potential taking into account the above factors for the sources being considered within this assessment. Hedonic scores for associated odour descriptors have been used to aid in the determination of unpleasantness, obtained from SEPA odour guidance.

Table 2: Summary of Source Odour Potential				
Operator	Magnitude	Odour Detection	Unpleasantness	Source Odour Potential
Proposed Restaurant Use	Small scale	Frying will be undertaken, potential for odours to be detected if unsuitable odour control.	Unpleasant when detected. -1.41 oily, fatty Pleasant cooking odours may also be detected	Small (Based on scale of development)

Pathway Effectiveness

- 4.1.4 The next stage of the assessment is to determine the effectiveness of the pollutant pathway. The following factors should be taken into consideration:
- Distance to receptor;
 - Prevailing wind direction;
 - The effectiveness of the point of release in promoting good dispersion;
 - The topography and terrain between the source and receptor.
- 4.1.5 To provide information on how odour may disperse, wind speed and wind direction data has been obtained from a meteorological recording station at Manchester Airport, taken from the Windfinder website. This data is provided at Appendix 1.
- 4.1.6 Table 3 below summaries the pathway effectiveness taking into account the above factors for the sources being considered within this assessment.

Table 3: Summary of Pathway Effectiveness				
Operator	Distance	Direction	Effectiveness of Dispersion	Pathway Effectiveness
Proposed Restaurant Use	20-100m from closest receptors directly adjacent to the site.	East of closest receptor	Receptors are local to the source but not directly downwind	Highly effective <i>Due to distance from source</i>

Receptor Sensitivity

- 4.1.7 As the closest receptors are deemed to be residential in nature, the sensitivity is deemed to be **high**.

Likely Odour Effect

- 4.1.8 The estimates of Source Odour Potential and Pathway Effectiveness are then considered together to predict the risk of odour exposure (impact) at the receptor location, using the matrix provided within Table 9 of the IAQM Guidance.
- 4.1.9 The next step is then to estimate the effect of that odour impact on the receptor locations, using Table 10 provided within the IAQM guidance.
- 4.1.10 This has been undertaken and a summary of the likely odour effects provided below in Table 4.

Table 4: Summary of the Likely Odour Effects at the Proposed Residential Site

Operator	Source Odour Potential	Pathway Effectiveness	Odour Exposure	Receptor Sensitivity	Likely Odour Effect
Proposed Restaurant Use	Small	Highly Effective	Low Risk	High	Slight Adverse Effect

4.2 EMAQ Risk Assessment

- 4.2.1 The risk scoring methodology contained within the EMAQ guidance has also been applied, based on available information, in order to determine the odour risk from the kitchen extraction and the level of odour control required.

Dispersion

- 4.2.2 The kitchen extraction system comprises an external flue, using a high velocity cowl that will terminate 2.1m above the eaves and approximately 14m above street level, as shown at Appendix 2.
- 4.2.3 In accordance with the guidance, dispersion is considered to be **good**.

Proximity to receptors

- 4.2.4 Given the elevation of the flue in relation to the surrounding receptors, the closest receptors are located between 20 – 100 m from the flue outlet.
- 4.2.5 The proximity of receptors is therefore deemed to be **medium**.

Size of kitchen

- 4.2.6 The size of the kitchen associated with proposed restaurant use is not known at this stage. However, based on 50% of the ground floor being consented for restaurant use, it is assumed that there will be more than 100 covers. This is deemed to be **large**.

Cooking type (odour and grease loading)

- 4.2.7 The cooking type is likely to be **high**, i.e., Indian, Thai, Turkish, Vietnamese and pizzas.

Risk Score

- 4.2.8 The overall risk score for the proposed kitchen extraction system is therefore **22**, consisting of:
- Dispersion: 5 points;
 - Proximity to receptors: 5 points;
 - Size of kitchen: 5 points; and
 - Cooking type: 7 points.
- 4.2.9 Based on the impact risk, the kitchen extraction system should include a **high level** of odour control in accordance with the EMAQ guidance.

5 SIGNIFICANCE

- 5.1.1 A qualitative risk-based assessment has been undertaken to consider the potential for odour from the proposed kitchen extraction system to give rise to an adverse odour effect at the closest receptors.

5.2 IAQM Guidance

- 5.2.1 Overall, the assessment demonstrates that the risk of an odour effect at the proposed development site is **slight adverse**, based on the assessment methodology contained within the IAQM guidance.

EMAQ Risk Assessment

- 5.2.2 Based on the risk scoring methodology contained within the guidance and consideration of receptors in close proximity, the kitchen extraction system should include a **high level** of odour control.
- 5.2.3 Providing that this is installed, the overall impact is deemed to be **not significant**.

6 MITIGATION MEASURES

- 6.1.1 As per the risk assessment above, a high level of odour abatement system should be installed. A high level of control can be provided by installing the following, in accordance with the EMAQ guidance:

High level odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 - 0.4 second residence time).
2. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

- 6.1.2 It is essential that the proposed odour/grease control system is used whenever food is being prepared or cooked on the premises and that nothing is done to affect the performance of such a system, i.e., open window and doors (unless part of the design) or alter any part of the system that will have a detrimental effect on the operation of the system.
- 6.1.3 The installed system should be well maintained to ensure the system remains as efficient as possible and to ensure that the plant remains in good condition.

7 CONCLUSION

- 7.1.1 A qualitative risk-based assessment has been undertaken to consider odour from the kitchen extraction system associated with a mixed use residential and commercial development at 764-786 Stockport Road.
- 7.1.2 Overall, the assessment demonstrates that the risk of an adverse odour effect is slight adverse, and a high level of odour control is recommended in accordance with the EMAQ risk assessment.

The IAQM Guidance states:

"The EIA regulations require an assessment to reach a conclusion on the likely significance of the predicted effect. Where the overall effect is greater than "slight adverse", the effect is likely to be considered significant. Note that this is a binary judgement: either it is "significant" or it is "not significant". Concluding that an effect is significant should not mean, of itself, that a development proposal is unacceptable and the planning application should be refused; rather, it should mean that careful consideration needs to be given to the consequences, scope for securing further mitigation, and the balance with any wider environmental, social and economic benefits that the proposal would bring."

- 7.1.3 As the potential odour effect is deemed to be 'slight adverse', in accordance with the above, this is considered to be **not significant**.
- 7.1.4 Odour associated with the kitchen extraction system should not be a prohibitive factor in the determination of this application, providing a high level of odour control system is installed.



Environmental Associates

NJD Environmental Associates LTD

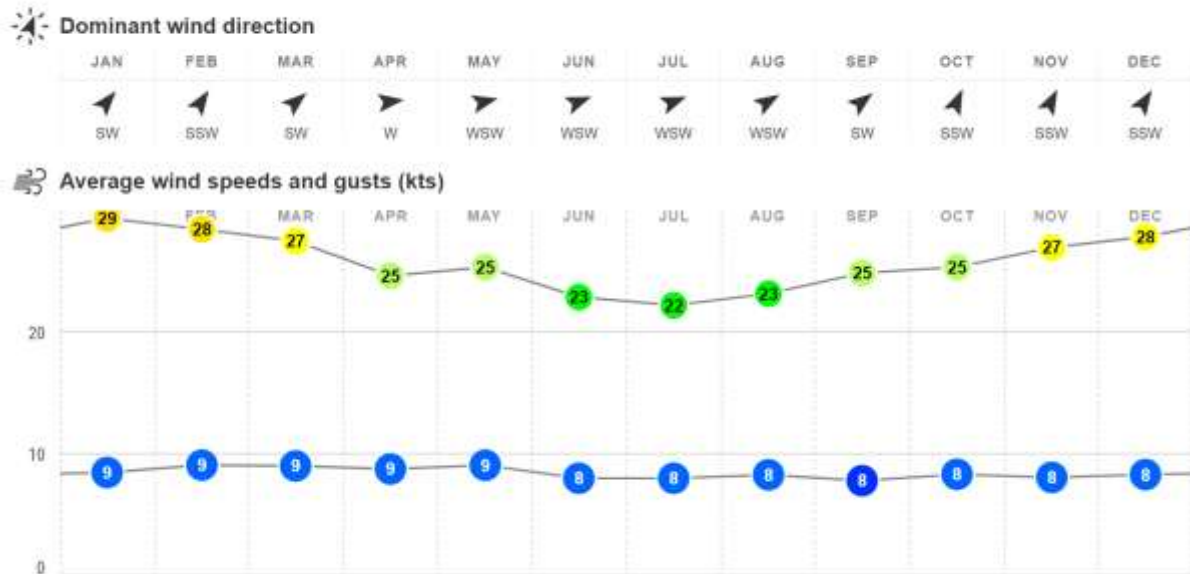
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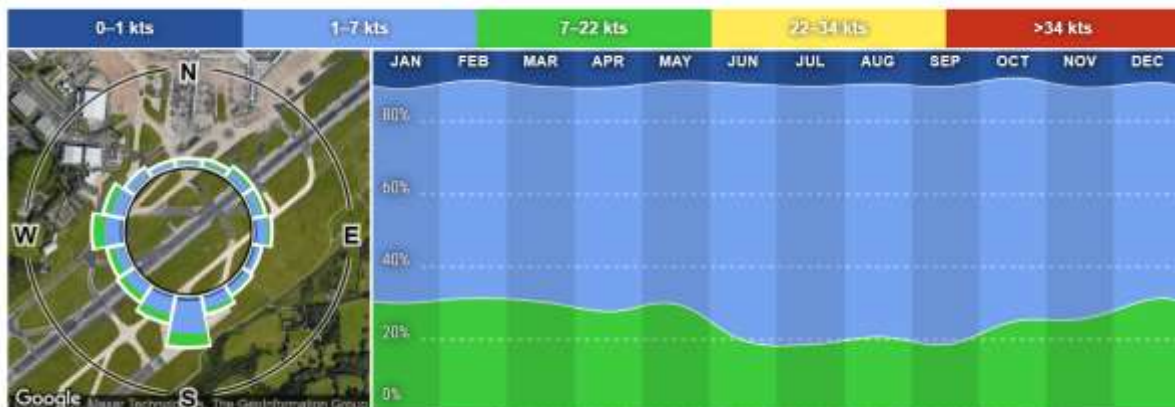


Appendix 1 Wind Data

Monthly wind speed statistics and directions for Manchester Airport



Monthly wind direction and strength distribution



Block Section

Parapet wall around flat roof

High velocity cowl – ventilation discharge

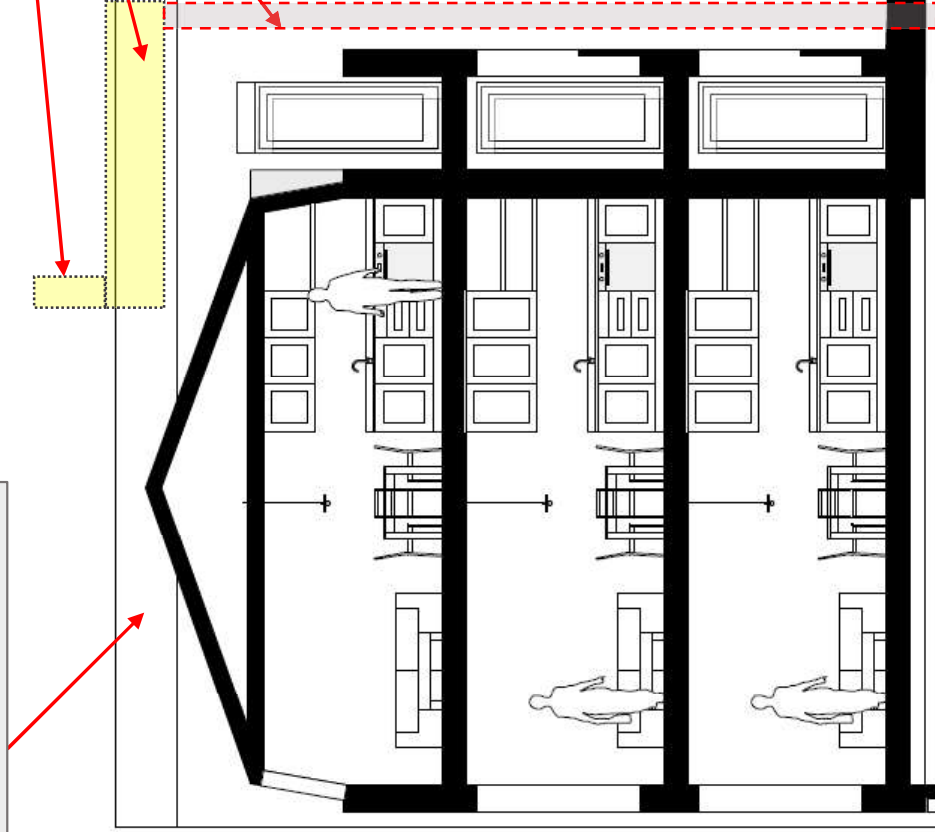
Ventilation equipment on roof

Vent riser to roof integrated into the building

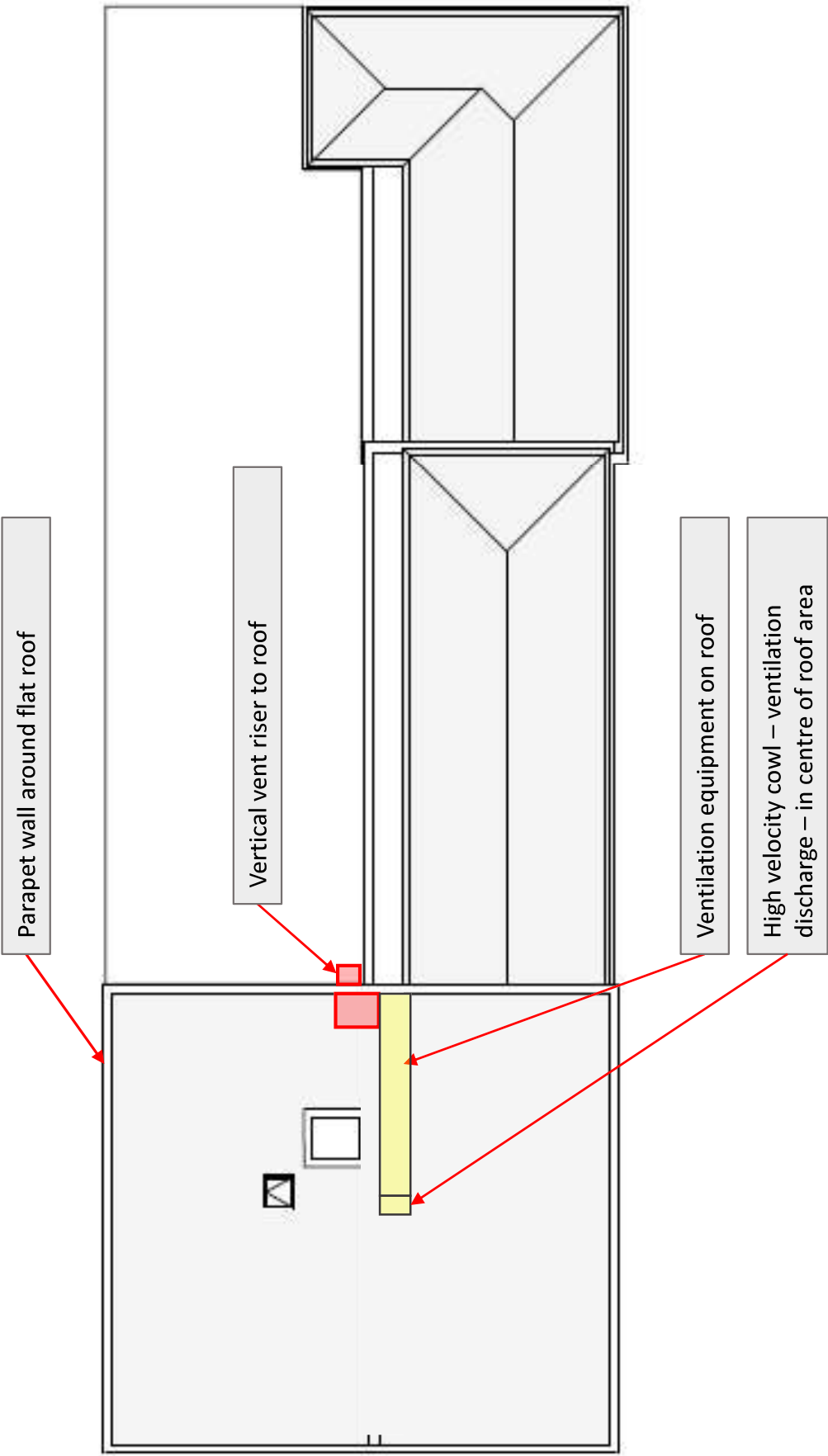
RETAIL UNIT

WC

BIN
STORE



Proposed Roof Plan



Roof level extraction system

Discharge at circa 2.1m above eaves level

High Velocity Cowl

Parapet wall – 1.2m

Filter system – to be specified at detailed design stage to meet requirements of OIA

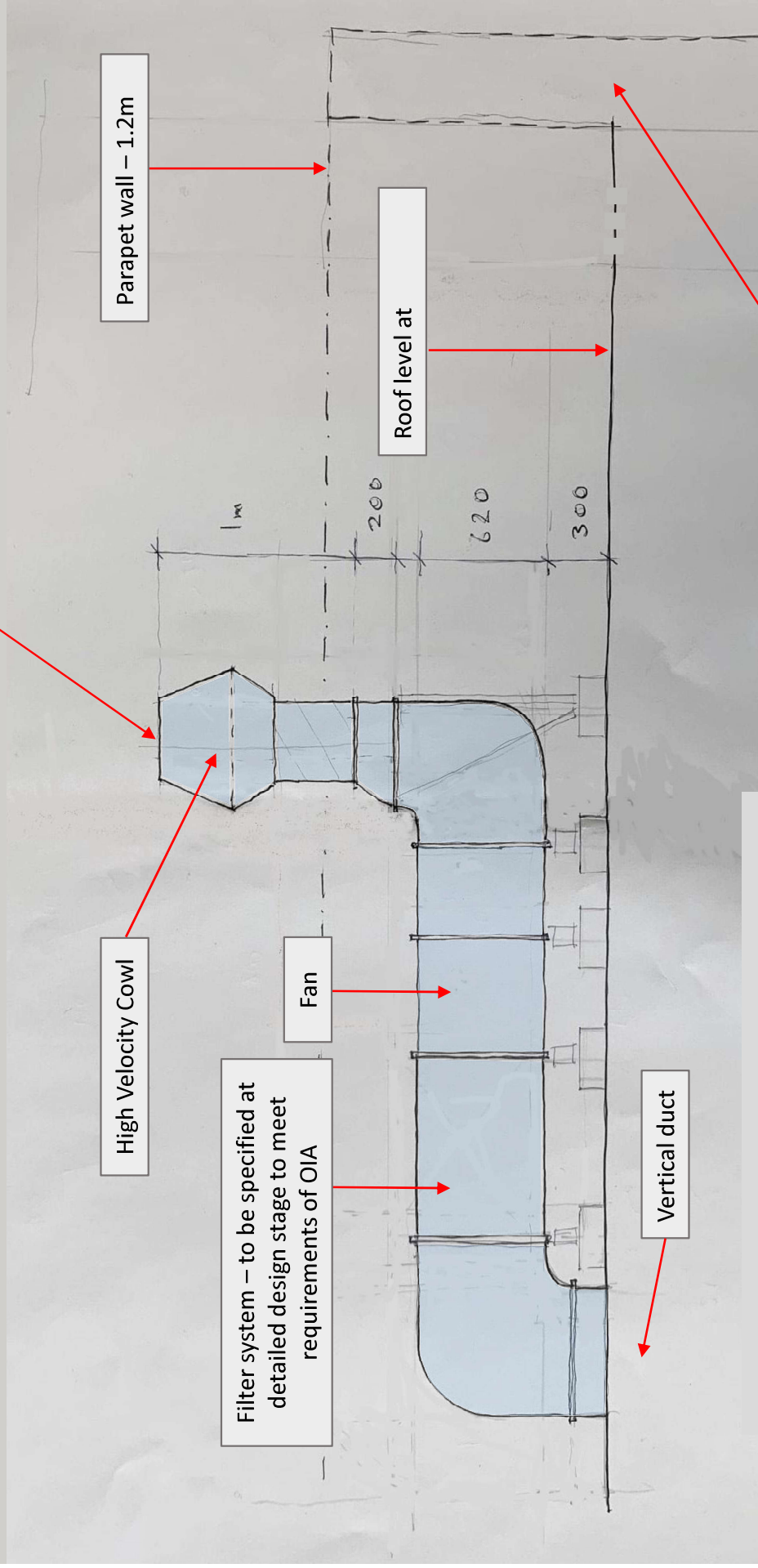
Fan

Roof level at

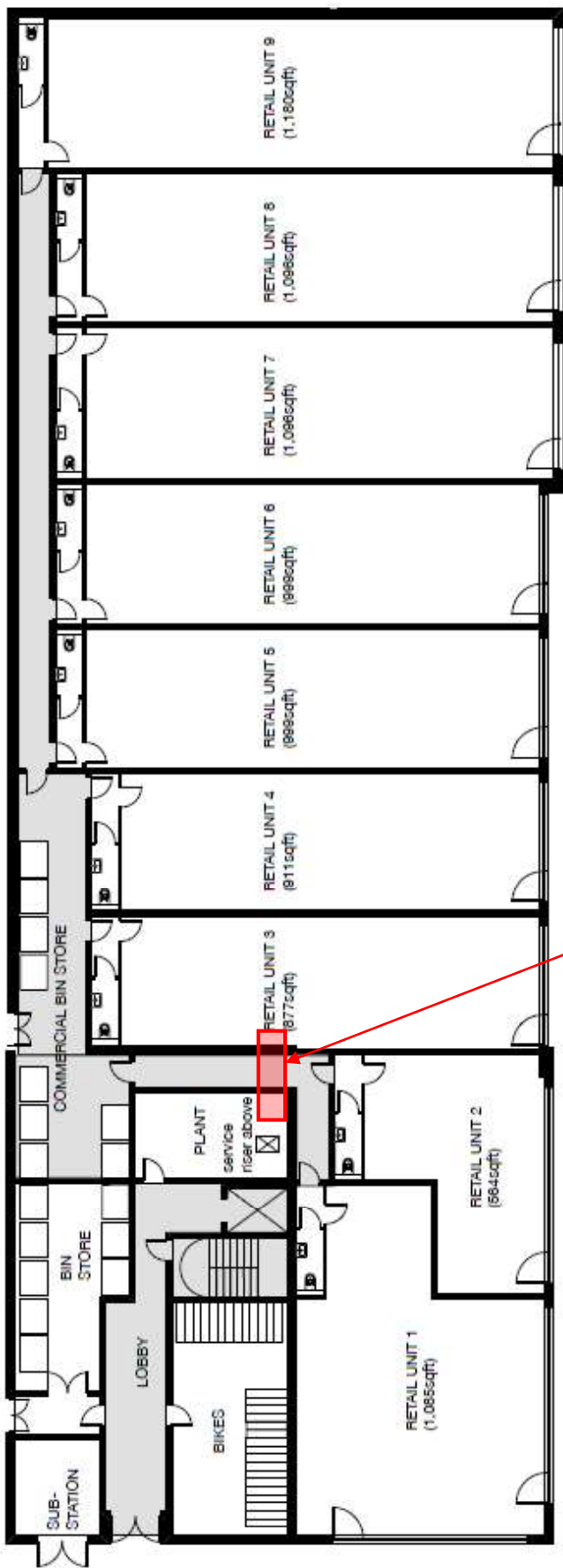
Vertical duct

eaves level

Diagrammatic model



Proposed Ground Floor



Location for kitchen vent connections into vertical duct.