



RIDGE

**VARLEY STREET
MANCHESTER**

Ventilation Statement
30th January 2023



**MANCHESTER
CITY COUNCIL**

**VARLEY STREET, MANCHESTER
MANCHESTER CITY COUNCIL**

January 2023

Prepared for

Manchester City Council

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1. INTRODUCTION

The purpose of this document is to describe the ventilation and extraction systems to be installed as part of the Varley Street, Manchester development. This should be read in conjunction with documents provided by other consultants as part of this submission.

The development is of a purpose built 150-place secondary (11-16) Special Education Needs and Disability (SEND) school for ambulant and non-ambulant pupils at Varley Street, Manchester. The site (Varley Street) is situated in the northeast of the city on Sawley Road, Miles Platting, covering approximately 15,239m².



2. NEW BUILDING LOCATION

This vacant site lies to the north eastern edge of Manchester within the Miles Platting area. It is bounded to the north and east by the A6010 Hulme Hall Lane, James Street and Nelson Street to the south and west framed by a swath of mixed light industrial units and a line of two and three storey private housing to the north, facing into the site across Sawley Road.



3. SCHEME DESIGN

3.1. Ventilation systems

Ventilation will largely be provided by individual room-based hybrid ventilation systems. All of these systems shall incorporate heat recovery to minimize the buildings energy usage.

The configuration of the ventilation system shall typically be as follows:

- Two Hybrid Heat Recovery Units per classroom
- Centralised or 'land-locked' rooms shall be fed by mechanical ventilation via MVHR units.
- The Dining Hall and Main Hall shall be provided with natural ventilation by roof mounted windcatcher units.

3.2. Acoustic Requirements

The acoustic strategy has been based on the following guidance:

- Approved Document E of the Building Regulations
- Building Bulletin 93 (BB93) Acoustic Design of Schools
- Output Specification – Annex SS1: School Specific SoA
- Acoustics of Schools: A Design Guide, November 2015 by the Institute of Acoustics and the Association of Noise Consultants

All ventilation systems within the new school building shall comply with the requirements outlined by the acoustic specialist and in the above documentation.

For classrooms, hybrid units have been selected which include integrated attenuators and low fan speeds which keep the breakout noise from the units below the limits required under BB93.

There are some internal rooms, such as the offices, staff room and group room, which do not have an external façade. These rooms shall be served by with mechanical ventilation with heat recovery (MVHR) units . In these instances, attenuators shall be installed on both the atmospheric and room side.

Where ductwork crosses over two rooms, crosstalk attenuators shall be installed.

The ducts of all mechanically fed ventilation shall be sized to keep the velocity as low as possible, in rooms the target shall be 2.5 m/s. For branches, main runs and risers the ductwork velocities shall comply with the requirements outlined by the acoustician.

3.3. Kitchen Ventilation

The kitchen shall be served by dedicated kitchen supply & extract fans located on the roof. The kitchen supply fan shall be attenuated. The ductwork shall run in a dedicated riser to feed the kitchen canopy. The kitchen canopy shall be specified and installed by a kitchen specialist.

As required under DW172 the kitchen extract fan shall be attenuated with melinex lined attenuators, to mitigate the risk of grease build up and reduce the risk of a fire.

The kitchen canopy shall have odour control to ensure compliance with the criteria outlined by DEFRA 2005, Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems Appendix C, which was subsequently updated by EMAQ in 2018.

The criteria for the assessment are as below:

Impact Risk	Odour Control Requirement	Significance Score*
Low/Medium	Low Level Odour Control	Less than 20
High	High Level Odour Control	20-35
Very High	Very High-Level Odour Control	More than 35

*Based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

Criteria	Rating	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s
	Moderate	10	Discharging 1 m above eaves at 10- 15m/s
	Good	5	Discharging 1m above ridge at 15m/s
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge.
	Far	1	Closest sensitive receptor more than 100m from kitchen discharge.
Size of kitchen	Large	5	More than 100 covers or large sized take away.
	Medium	3	Between 30 and 100 covers or medium sized take away.
	Small	1	Less than 30 covers or small take away.

Criteria	Rating	Score	Details
Cooking type (odour and grease loading)	Very high	10	Pub (high level of fried food), fried chicken, burgers, or fish & chips. Turkish, middle eastern or any premises cooking with solid fuel
	High	7	Vietnamese, Thai or Indian, Japanese, Chinese, Steakhouse
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food, reheating, sandwiches), Coffee shop.

The assessment of the proposed risk in line with the above criteria is as below:

Category	Score	Detail
Dispersion	10	The discharge is assumed to be above the eaves
Proximity of the Receptors	5	The closest residential property the north is approximately 65m.
Size of Kitchen	3	It is assumed the lunches will be serves in slots.
Cooking Type	4	There are a number of fryers to prepare fried food.
Total Score	22	
Level of Odour Control Required	Medium	

Due to the “medium” level of odour control required within the exhaust system, the extract shall be provided with odour control measures including “Fine Filtration followed by a UV Ozone” system in accordance with the statutory guidance. **The details of these systems shall be provided by the kitchen specialist at detailed design stage.**



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