



Odour Assessment

Hopwood Hall College, Rochdale, OL12 6RY

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Executive Summary

Site Address

**Hopwood Hall College, Rochdale Campus, St Mary's Gate, Rochdale,
OL12 6RY**

An Odour Assessment was undertaken to support a planning application for the redevelopment of Hopwood Hall College, Rochdale.

The proposals include amendments to the kitchens. Food preparation activities have the potential to form a source of odour emissions during normal operation and lead to loss of amenity at nearby sensitive receptors. As such, an assessment of the flue, ventilation and extraction system was required to evaluate potential effects as a result of the development, review the suitability of the proposed abatement measures and identify any requirement for additional mitigation to control impacts to an acceptable level.

An assessment using the standard industry methodology was undertaken to identify the odour risk associated with the proposals. This was based on a number of site-specific inputs.

The results of the assessment indicated the odour risk was classified as **high**. This prediction does not infer that the proposed development would result in significant odour impact or affect local amenity levels. However, it does suggest that appropriate mitigation options are required to reduce potential effects to an acceptable level.

The proposed abatement strategy for the extraction system has been specified in line with the relevant guidance for kitchens with a **high** risk of impact. It therefore follows that with this mitigation in place, potential odour impacts at nearby sensitive receptors would be reduced to an acceptable level.

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1.0 INTRODUCTION

1.1 Background

This report has been prepared to support a planning application for the redevelopment of Hopwood Hall College, Rochdale.

The Odour Assessment was undertaken by Omnia's partner Redmore Environmental Ltd.

The proposals include amendments to the kitchens. Food preparation activities have the potential to form a source of odour emissions during normal operation and lead to loss of amenity at nearby sensitive receptors. As such, an assessment of the flue, ventilation and extraction system was required to evaluate potential effects as a result of the development, review the suitability of the proposed abatement measures and identify any requirement for additional mitigation to control impacts to an acceptable level.

1.2 Proposed Development

The site is located at Hopwood Hall College, Rochdale Campus, St Mary's Gate, Rochdale, OL12 6RY, at approximate National Grid Reference (NGR): 389305, 413400. Reference should be made to Figure 1 for a map of the site and surrounding area.

The proposals comprise the redevelopment of existing education buildings to provide three training kitchens for students to learn to cook, as well as other facilities.

The proposed kitchens will be in use during the college's operational hours which are 09:00 to 16:00, Monday to Friday. Two catering rooms will be used on a Wednesday until 19:00. The remaining room will be used on a Thursday until 20:30. There are no servery or sales opportunities from the proposed training kitchens.

It is anticipated that a maximum of 17 meals will be prepared per teaching session, which equates to approximately 102 meals per day on average. Cooking methods include portable hobs, combi ovens, provers, fryers, electric grills and a gas-fired pizza oven.

Odour emissions will be extracted from the kitchens via dedicated canopies above the combi oven and portable hob areas. Various CleanAir ventilation canopies, proposed by Kitchen Vent Technical (KVT) Ltd, will be installed over the hot food preparation areas. These will be fitted with CleanAir Spectrum systems for odour and grease control. These consist of filters for grease separation, as well as ultraviolet (UV) light for odour control. Any works undertaken within the kitchens that produce odour should be undertaken under the canopies. Treated air will then be exhausted to atmosphere a minimum of 1m above parapet level, via a high-velocity jet cowl at 12 - 15m/s. Reference should be made to Appendix 2 for information sheets for the CleanAir Spectrum UV units.

1.3 Objectives

Food preparation activities have the potential to form a source of odour emissions during normal operation and lead to loss of amenity at nearby sensitive receptors. As such, an assessment of the flue, ventilation and extraction system was required to evaluate potential effects as a result

of the development, review the suitability of the proposed abatement measures and identify any requirement for additional mitigation to control impacts to an acceptable level. This is detailed in the following report.

1.4 Acronyms

All acronyms used within this report are defined in the Abbreviations listings, set out in Section 7.

1.5 Confidentiality

This report has been prepared solely for the use of the Client. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Omnia; a charge may be levied against such approval.

2.0 ODOUR BACKGROUND

2.1 Odour Definition

The Institute of Air Quality Management (IAQM) guidance¹ defines odour as:

“[...] the human olfactory response (perception followed by psychological appraisal) to one, or more often a complex mixture of, chemical species in the air.”

The stated definition is considered to be relevant in the context of this assessment.

2.2 Odour Impacts

The magnitude of odour impact depends on a number of factors and the potential for complaints varies due to the subjective nature of odour perception. The **FIDOL** acronym is a useful reminder of the factors that will determine the degree of odour pollution. These are described by the IAQM² as follows:

- **Frequency of detection** - frequent odour incidents are more likely to result in complaints;
- **Intensity** - the individual's perception of the strength of the odour;
- **Duration** - the overall duration that individuals are exposed to an odour over time;
- **Odour unpleasantness** - odour unpleasantness describes the character of an odour as it relates to the 'hedonic tone' (which may be pleasant, neutral or unpleasant) at a given odour concentration/ intensity. This can be measured in the laboratory as the hedonic tone, and when measured by the standard method and expressed on a standard nine-point scale it is termed the hedonic score; and,
- **Location** - the type of land use and nature of human activities in the vicinity of an odour source. Tolerance and expectation of the receptor. The 'Location' factor can be considered to encompass the receptor characteristics, receptor sensitivity, and socio-economic factors.

The **FIDOL** factors can be further considered to provide the following issues in regards to the potential for an odour emission to cause a nuisance:

- The rate of emission of the compound(s);
- The duration and frequency of emissions;
- The time of the day that this emission occurs;
- The prevailing meteorology;
- The sensitivity of receptors to the emission i.e. whether the odorous compound is more likely to cause nuisance, such as the sick or elderly, who may be more sensitive;
- The odour detection capacity of individuals to the various compound(s); and,
- The individual perception of the odour (i.e. whether the odour is regarded as unpleasant). This is greatly subjective and may vary significantly from individual to individual. For example, some individuals may consider some odours as pleasant, such as petrol, paint

¹ Guidance on the Assessment of Odour for Planning V1.1, IAQM, 2018.

² Guidance on the Assessment of Odour for Planning V1.1, IAQM, 2018.

and creosote.

2.3 Odour Legislative Control

The main requirements with respect to odour control from premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as education facilities, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."

Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

2.4 National Planning Policy

The revised National Planning Policy Framework³ (NPPF) was published in December 2024 and sets out the Government's planning policies for England and how these are expected to be applied.

The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to air quality:

"c) an environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

Chapter 12 of the NPPF details objectives in relation to achieving well-designed places. It states that:

"Planning policies should ensure that developments:

[...]

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesions and resilience"

³ NPPF, Ministry of Housing, Communities and Local Government, 2024.

The implications of the NPPF have been considered throughout this assessment.

2.5 Local Planning Policy

The Rochdale Core Strategy⁴ was adopted by Rochdale Borough Council (RBC) on 19th October 2016. Review of the document indicated the following policies of relevance to this assessment:

"G9 - Reducing the impact of pollution, contamination and land instability

We will reduce all forms of pollution, contamination and land instability in the borough by:

[...]

b. Requiring that development does not have impacts that lead to an unacceptable increase in air, water, noise, light or other pollution; [...]"

"DM1 - General development requirements

All development proposals, including change of use of land and buildings, extensions and alterations, will be expected to demonstrate that they:

[...]

d. Mitigate against any impacts due to noise, air, dust, light and odour pollution [...]"

These policies have been taken into considered throughout this assessment.

⁴ Rochdale Core Strategy, RBC, 2016.

3.0 METHODOLOGY

3.1 Introduction

The proposals have the potential to cause odour impacts as a result of emissions from cooking processes within the training kitchens. An assessment has therefore been undertaken in accordance with guidance document 'Control of Odour and Noise from Commercial Kitchen Exhaust Systems' prepared by EMAQ+ for the Department for Environmental, Food and Rural Affairs (DEFRA)⁵. This document provides an update to the 2005 guidance⁶ produced by DEFRA.

The relevant process is summarised in the following Sections.

3.2 EMAQ+ and DEFRA Methodology

The EMAQ+ and DEFRA methodology provides an approach for identifying the risk of odour impact associated with food preparation premises and defining an appropriate level of mitigation to control potential effects to an acceptable level.

The first stage in the process is to score the odour risk in accordance with the criteria outlined in Table 1.

Table 1 Risk Scoring Criteria

Criteria	Score	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 10m/s
	Moderate	10	Discharging 1m 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 takeaway
	Medium	3	Between 30 and 100 covers or medium sized takeaway
	Small	1	Less than 30 covers or small take away
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

⁵ Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

⁶ Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, DEFRA, 2005.

Criteria	Score	Score	Detials
	High	7	Vietnamese, Thai, Indian, Japanese, Chinese or steakhouse
	Medium	4	Cantonese, Italian, French, Pizza (gas fired)
	Low	1	Most pubs (no fried food, mainly reheating and sandwiches etc) or tea rooms

The score obtained using the values shown in Table 1 is subsequently used to define the level of risk and odour control requirement. The relevant criteria are summarised in Table 2.

Table 2 Odour Control Requirement

Significance Score	Impact Risk	Odour Control Requirement
Less than 20	Low to Medium	Low level odour control
20 to 35	High	High level odour control
More than 35	Very high	Very high level odour control

A suitable odour control system can then be identified from the techniques summarised in the EMAQ+ and DEFRA guidance⁷.

⁷ Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

4.0 ASSESSMENT

4.1 EMAQ+ and DEFRA Risk Assessment

The odour risk associated with the proposals was rated in accordance with the EMAQ+ and DEFRA methodology⁸. The results are summarised in Table 3.

Table 3 Odour Risk

Criteria	Score	Score	Notes
Dispersion	Good	5	Emissions from the hot food preparation areas will be extracted from the kitchens via CleanAir ventilation canopies, fitted with CleanAir Spectrum systems containing grease filters and UV odour control. Treated air will then be exhausted to atmosphere a minimum of 1m above parapet level via high velocity jet cowls at 12 - 15m/s
Proximity of receptors	Medium	5	The nearest proposed residential receptors are located approximately 70m to the north of the college
Size of kitchen	Large	5	On average, a maximum of 102 meals will be prepared per kitchen, per day. As such, a score of 'large' has been applied, though it should be noted that there will be no servery or sales opportunities from the proposed training kitchens
Cooking type (odour and grease loading)	High	7	The cooking type will include a low level of fried food, combi ovens, a gas-fired pizza oven, portable hobs and an electric grill. No solid fuel will be used

As shown in Table 3, the odour risk for the proposed development was scored as 22. The risk was therefore classified as **high**, in accordance with the EMAQ+ and DEFRA criteria.

4.2 Odour Control

Based on the assessment results, the kitchens require mitigation suitable for a **high** level of odour risk. There are a number of options for abatement identified within the EMAQ+ and DEFRA guidance⁹ that provide this level of control. These include:

- Emission collection - Odour should be collected via extraction hoods situated above the hot food preparation area;

⁸ Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

⁹ Control of Odour and Noise from Commercial Kitchen Exhaust Systems, EMAQ+, 2022.

- Grease filtration system - Mesh type grease filters, such as baffle or cartridge filters, should be included for the purpose of grease filtration;
- Fine dust filter - Bag, fan or High-Efficiency Particulate Arrestance filters. Alternatively, an oxidation system such as UV light or ozone may be used;
- Gaseous phase - An activated carbon filter rated with a 0.2 - 0.4 second residence time should be included for odour removal. Alternatively, an oxidation system such as UV light or ozone may be used; and,
- Dispersion - Emissions should be discharged vertically through a stack, high enough to ensure adequate dilution.

As stated previously, emissions associated with food preparation activities within the training kitchens will be extracted via dedicated CleanAir ventilation canopies above the combi ovens and portable hobs, as proposed by KVT Ltd. These will be fitted with CleanAir spectrum systems for odour and grease control, fitted with the following filtration stages:

- Grease filtration - baffle-type grease filters with a plenum mounted above the canopy for grease collection;
- Fine dust filter and gaseous phase treatment - CleanAir Spectrum in-canopy UV system, consisting of UV-C light for fine dust and odour control; and,
- Dispersion - Treated air will be discharged vertically above parapet level, via high velocity jet cowls at 12 - 15m/s.

The proposed measures are consistent with requirements specified for kitchens with a **high** risk of impact in the EMAQ+ and DEFRA guidance. As such, the mitigation proposed by KVT Ltd is considered suitable to reduce potential effects associated with the scheme to an acceptable level.

5.0 CONCLUSION

This report has been prepared to support a planning application for the redevelopment of Hopwood Hall College, Rochdale.

Food preparation activities have the potential to form a source of odour emissions during normal operation and lead to loss of amenity at nearby sensitive receptors. As such, an assessment of the flue, ventilation and extraction system was required to evaluate potential effects as a result of the development, review the suitability of the proposed abatement measures and identify any requirement for additional mitigation to control impacts to an acceptable level.

The results of the assessment indicated the odour risk was classified as **high**. This prediction does not infer that the proposed development would result in significant odour impact or affect local amenity levels. However, it does suggest that appropriate mitigation options are required to reduce potential effects to an acceptable level.

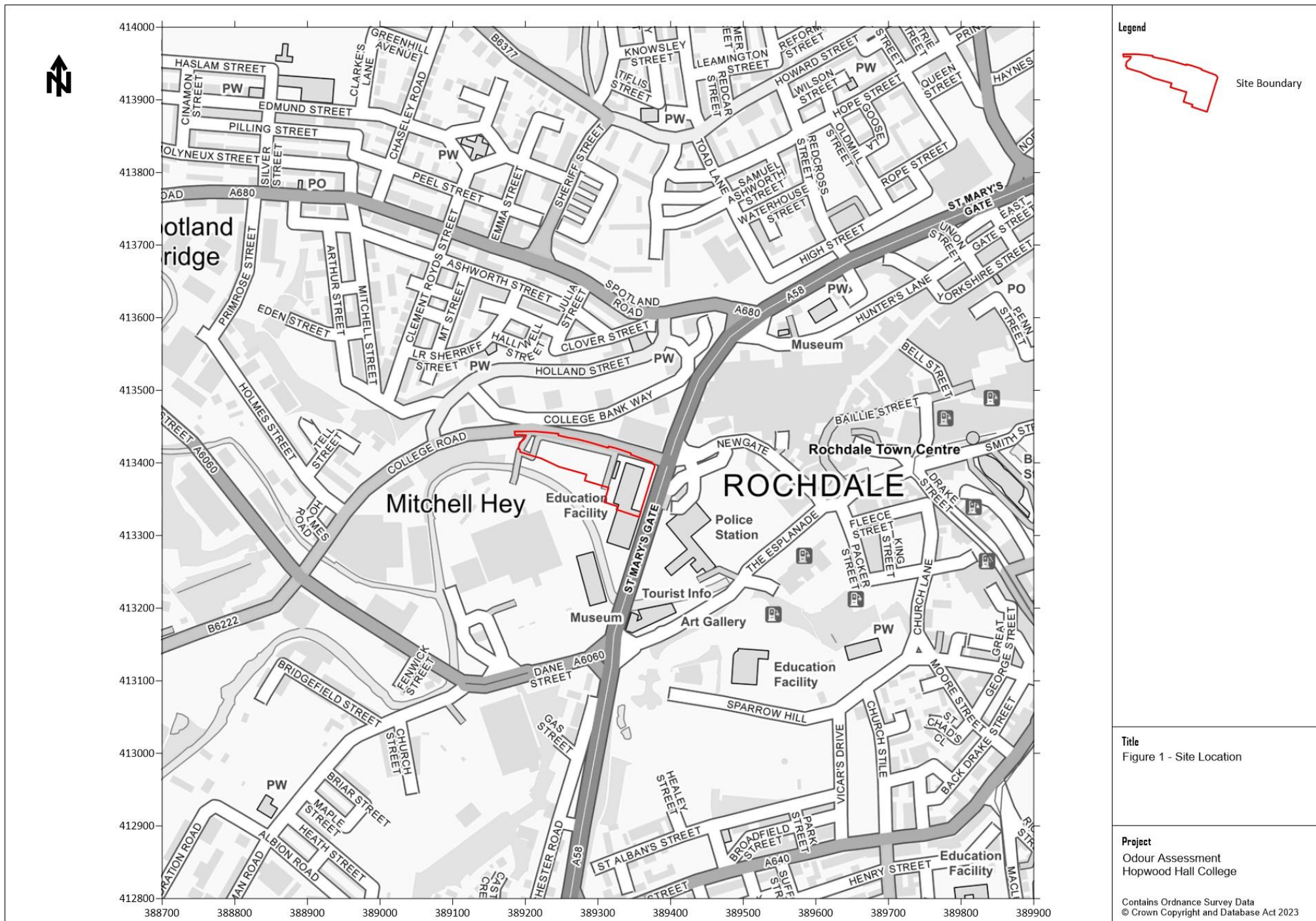
The proposed odour abatement strategies for the extraction systems have been specified in line with the EMAQ+ and DEFRA guidance for kitchens with a **high** risk of impact. It therefore follows that with this mitigation in place, potential odour impact at nearby sensitive receptors would be reduced to an acceptable level.

6.0 ABBREVIATIONS

DEFRA Department for Environment, Food and Rural Affairs
IAQM Institute of Air Quality Management
KVT Kitchen Vent Technical
NGR National Grid Reference
NPPF National Planning Policy Framework
RBC Rochdale Borough Council
UV Ultraviolet

APPENDIX I

Drawings



APPENDIX II
Technical Specifications

REF: Hopwood Hall College, Rochdale – Kitchen Canopies

What follows is a version of our v2 proposal in the form of a scope/specification for our Extract-Only canopies & UV, without prices. Please see our v2 proposal for all inclusions, exclusions, notes and considerations:

Our schedule & scope of works – CATERING KITCHEN 1:

1. ITEM EC-01a - KITCHEN VENTILATION CANOPY:

- ✓ REFERENCE: **DOUBLE SIDED ISALND CANOPY – SECTION “A” – OVER COMBI-OVENS**
- ✓ MODEL NO: **ClearAir EOr-DIV35-1200-0.98**
- ✓ MEASURING: **1200 mm long x 3500 mm wide x 500 mm deep** sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **0.98 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: **2** no. open-ended, rectangular connections, each **50 mm** high.

2. ITEM EC-01b - KITCHEN VENTILATION CANOPY:

- ✓ REFERENCE: **DOUBLE SIDED ISALND CANOPY – SECTION “B” – OVER PORTABLE HOBS**
- ✓ MODEL NO: **ClearAir EOr-DIV23-5400—1.01**
- ✓ MEASURING: **5400 mm long x 2350 mm wide x 500 mm deep** sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **1.01 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: **4** no. open-ended, rectangular connections, each **50 mm** high.

3. ITEM EC-01c - ODOUR & GREASE CONTROL: ‘ClearAir Spectrum’ integral, in-canopy UV System Comprising:

- ✓ Manufacture, delivery and installation
- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel
- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m⁻²**.

4. ITEM EC-02a - KITCHEN VENTILATION CANOPY:

- ✓ REFERENCE: **SINGLE SIDED WALL CANOPY**
- ✓ MODEL NO: **ClearAir EO-WM16-2800-0.82**
- ✓ MEASURING: **2800 mm long x 1600 mm wide x 500 mm deep** sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **0.82 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.

- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: 2 no. open-ended, rectangular connections, each 50 mm high.

5. **ITEM EC-02b - ODOUR & GREASE CONTROL: 'ClearAir Spectrum' integral, in-canopy UV System Comprising:**

- ✓ Manufacture, delivery and installation
- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel
- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m⁻²**.

Our schedule & scope of works – **CATERING KITCHEN 2:**

6. **ITEM EC-03a - KITCHEN VENTILATION CANOPY:**

- ✓ REFERENCE: **DOUBLE SIDED ISLAND CANOPY**
- ✓ MODEL NO: **ClearAir EOr-DIV23-7250-1.01**
- ✓ MEASURING: **7250 mm long x 2350 mm wide x 500 mm deep** sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **1.01 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: 4 no. open-ended, rectangular connections, each 50 mm high.

7. **ITEM EC-03b - ODOUR & GREASE CONTROL: 'ClearAir Spectrum' integral, in-canopy UV System Comprising:**

- ✓ Manufacture, delivery and installation
- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel
- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m⁻²**.

8. **ITEM EC-04a - KITCHEN VENTILATION CANOPY:**

- ✓ REFERENCE: **SINGLE SIDED WALL CANOPY**
- ✓ MODEL NO: **ClearAir EOr-WM19-6400-2.68**
- ✓ MEASURING: **6400 mm long x 1900 mm wide x 500 mm deep** sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **2.68 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: 3 no. open-ended, rectangular connections, each 50 mm high.

9. **ITEM EC-04b - ODOUR & GREASE CONTROL: 'ClearAir Spectrum' integral, in-canopy UV System Comprising:**

- ✓ Manufacture, delivery and installation

- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel
- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m⁻²**.

Our schedule & scope of works – CATERING KITCHEN 3:

10. ITEM EC-05a - KITCHEN VENTILATION CANOPY:

- ✓ REFERENCE: **DOUBLE SIDED ISLAND CANOPY**
- ✓ MODEL NO: **ClearAir EOr-DIV23-6400-1.01**
- ✓ MEASURING: **6400** mm long x **2350** mm wide x **500** mm deep sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract & Supply-Air
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **1.01 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: **4** no. open-ended, rectangular connections, each **50** mm high.

11. ITEM EC-05b - ODOUR & GREASE CONTROL: 'ClearAir Spectrum' integral, in-canopy UV System Comprising:

- ✓ Manufacture, delivery and installation
- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel
- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m⁻²**.

12. ITEM EC-06a - KITCHEN VENTILATION CANOPY:

- ✓ REFERENCE: **SINGLE SIDED WALL CANOPY**
- ✓ MODEL NO: **ClearAir EOr-WM16-4550-1.46**
- ✓ MEASURING: **4550** mm long x **1600** mm wide x **500** mm deep sloping up to 250mm deep at the working edge.
- ✓ TYPE: Extract Only
- ✓ MATERIALS: Type 304 Stainless steel sheet with a satin brush-finished finish.
- ✓ CONSTRUCTION: Fully folded, welded and bolted double skinned construction with self-supporting rigid chassis and with no visible fixings for easily cleaned finish.
- ✓ LIGHTING: Grease, heat & steam resistant LED fittings, providing an average of 500 lux on the working plane below, prewired to a junction terminal within the canopy (final wiring, emergency back-up & switching by others).
- ✓ EXTRACT FLOW-RATE: **1.46 m³.s⁻¹** at approximately **150 N.m⁻²** at the spigot connection.
- ✓ FILTRATION: Stainless steel, High efficiency, Baffle type grease separators mounted in an easy- access housing with integral grease management system.
- ✓ EXTRACT SPIGOTS: **2** no. open-ended, rectangular connections, each **50** mm high.

13. ITEM EC-06b - ODOUR & GREASE CONTROL: 'ClearAir Spectrum' integral, in-canopy UV System Comprising:

- ✓ Manufacture, delivery and installation
- ✓ Ultra-Violet UVC-wave-length Grease and Odour Control, mounted within the grease separator plenum of the above canopy
- ✓ Automatic operation & shutdown
- ✓ User interface & isolation
- ✓ 3 level UV safety system
- ✓ Stand-alone monitoring & control panel

- ✓ Internal pre-wiring will be completed by KVT, for connection to suitably sized and protected commando-type plug and socket to be provided by others within 1 m of our UV control panel.
- ✓ **NOTE:** Subject to final design, the incorporation of UV within the above canopies will typically increase resistance to airflow at the extract duct connection spigots, by between **75 and 150 N.m²**.

I hope that this meets with your requirements but please call me if I can give any additional help.

Yours sincerely

Ian Levin

Ian Levin

For & on behalf of Kitchen Vent Technical Ltd.

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