



Unit 17
Milland Road Industrial Estate
Neath
SA11 1NJ

Leicester House

Glynneath

24th November 2025

Leicester House - Glynneath

Commercial Kitchen Canopy, Ventilation, Noise and Odour Assessment Report

Dear Mr Greg Roberts

The HVAC specification DW172 shall be used as the basis for Kitchen ventilation Systems design and installation.

Extraction – The calculations for the extract volume flow rate for each canopy shall be determined by the equipment beneath the canopy and its location. The procedure for design shall be the ‘thermal convection’ method as detailed in DW172. The calculation as follows:-

Plan size of appliance (m²) x Thermal convection coefficient (m³/s/m²) = Flow Rate (m³/s) per appliance.

Fresh Supply Air – The calculations used to provide sufficient fresh air to ensure complete combustion of fuel and provide safe operation for gas equipment (BS6173:2009) will be based on a maximum of 85% of the extract volume of air to ensure the kitchen is kept under a negative pressure.

Fresh Air Temperature – An air supply temperature of 12deg C is considered a minimum for comfort directly below the supply terminals (BSRIA Study Feb 2013). This will be gained by using an Electric Heater Battery or Low Pressure, Hot Water Coil and offered as a separate item.

Noise Generating Equipment – By virtue the plant is noise generating and measures shall be taken to reduce & mitigate plant noise break out to local residential receptors/premises. We will design the acoustic measures to comply with criterion as indicated within a noise report

These can be controlled using measures such as:-

- Acoustic Silencers
- Low Velocity Ductwork Sizing
- Acoustic Fan Jackets
- Anti-Vibration Ancillaries

Odour Abatement – To counteract and control emissions, residual and spillage nuisance odours we recommend that the following measures are taken to control this.

- Primary Baffle Filters
- Pre Filtration (Mesh and Bag G4)
- Extra Duty Carbon Filters
- OC1 Ozone Neutralising Unit
- Electro Static Precipitators
- UV Light

Conclusion

<u>Specification</u>	<u>Type</u>	<u>Size/Flow Rate/Required Y/N</u>	
<u>Canopy Type/Size</u>	<u>3400 x 1100 x 500</u>	<u>1.1m3/s</u>	
<u>Extract Fan</u>	<u>AR450 E4-1</u>	<u>1.3m3/s</u>	
<u>Supply Fan</u>	<u>N/A</u>		
<u>Heating Element</u>	<u>N/A</u>		
<u>Noise Measures</u>	<u>N/A</u>		
<u>Odour Measures</u>	<u>N/A</u>	<u>Refer to RA</u>	

I hope the above information is acceptable and contains sufficient information with the proposed development and if any other information is required, please do not hesitate to contact us on the numbers below.

Yours Sincerely

Ashley Daniels

Managing Director

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Risk Assessment for Odour Control

Odour control must be designed to prevent nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements require at the aforementioned site.

<u>Measure</u>	<u>Score</u>	<u>Details</u>
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Dispersion

<u>Very poor</u>	<u>40</u>	<u>Low Level Discharge into courtyard/public access</u>
<u>Poor</u>	<u>30</u>	<u>Below eaves @ 10m/s</u>
<u>Moderate</u>	<u>20</u>	<u>1mtr above eaves but low velocity</u>
Good	10	1mtr above eaves with high velocity cow

Proximity of dwellings

<u>Close</u>	<u>30</u>	<u>Within 10mtrs from kitchen discharge</u>
Medium	20	Within 20mtrs from kitchen discharge
<u>Fair</u>	<u>10</u>	<u>Over 20mtrs from kitchen discharge</u>

Size of Kitchen

<u>Large</u>	<u>30</u>	<u>More than 100covers or large Takeaway</u>
<u>Medium</u>	<u>20</u>	<u>Between 50-100 covers or medium Takeaway</u>
Small	10	Less than 30 covers or small Takeaway

Cooking Type (Odour and Grease)

<u>Very High</u>	<u>40</u>	<u>Pub with high level of fried food/chargrill/charcoal</u>
<u>High</u>	<u>30</u>	<u>Kebab, Thai, Indian</u>
Medium	20	Chinese, Japanese, Small Pub
<u>Low</u>	<u>10</u>	<u>Carvery, Italian, French</u>

<u>Total Score</u>	
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Impact Risk

Low to Medium	Low Level Odour Control if any	Lower than 60
<u>High</u>	<u>High Level Odour Control</u>	<u>Between 60-100</u>
<u>Very High</u>	<u>Very High Level Odour Control</u>	<u>Over 100</u>

Discharge Stack

The discharge stack shall:-

1. Discharge the extracted air not less than 1mtr above the eaves of any building within 10mtrs of the closest property housing the commercial kitchen.
2. If 1 cannot be complied for planning reasons, then the extracted air shall be discharged 1mtr above eaves or window of the building housing the commercial kitchen. Additional odour reduction methods maybe required
3. If 1 or 2 cannot be complied with for planning reasons, exceptionally high level of odour control will be required. See Impact Risk – Very High

Odour neutralising performance

Low to Medium level control may include:-

- i. Baffle Filters / Veritech Filters within Canopy

High level of odour/smoke control may include:-

- i. Baffle Filters / Veritech Filters within Canopy
- ii. Odour Control Neutraliser and Carbon Filters with Dwell time of 0.3
- iii. Electro Static Precipitators to suit air volume
- iv. UV System for smoke

Very high level of odour/smoke control may include:-

- i. Veritech Filters within Canopy
- ii. Odour Control Neutraliser and Carbon Filters with Dwell time of 0.5 – 0.6
- iii. Double Pass Electro Static Precipitators to suit air volume
- iv. UV System for smoke

Maintenance

Proprietors of commercial kitchens have a duty to ensure that the ventilation system has regular maintenance checks and servicing. Good maintenance ensures the designed system works effectively and efficiently and conforms to the local planning authorities guidelines given at the redevelopment stage.

<u>Light Use</u>	<u>12-16 Hours per Day</u>	<u>6-12 months</u>
<u>Moderate Use</u>	<u>6-12 Hours per Day</u>	<u>3-6 months</u>
<u>Heavy Use</u>	<u>2-6 Hours per Day</u>	<u>1-3 months</u>

Baffle Grease Filters

Applications

It is recognised that there is an increasing need to maintain and improve hygiene standards in kitchens and to reduce the fire hazards above the heat source.

The Airclean baffle filter reduces this fire hazard with their unique design concept of non-grease loading (negligible grease accumulation), and interlocking baffle walls which restrict the passage of flames into the ductwork.



Construction

Housed in a stainless steel channel framework are a series of vertical stainless steel air baffles which are strategically aligned to change the direction of the grease-laden air. This action causes the deposition of the grease quickly, without re-entrainment onto the baffles whilst the grease-free air passes through the filter. The baffle's smooth surface enables deposited grease to run off via the drainage holes to collecting trays in the housing, minimising grease build-up.

The retractable handle facilitates easy removal from the housing.

Materials available:

Aluminium
Stainless steel Grade 304
Stainless steel Grade 430 - ECO.

Capacity Chart

Data based on Face Velocity of 1.5 m/s (300 fpm)

SIZE OT Inches	SIZE Actual mm	Flow Rate	
		m ³ /s	Pa
16 x 16	394 x 394	0.25	125
20 x 10	495 x 242	0.19	110
20 x 16	495 x 394	0.31	125
20 x 20	495 x 495	0.39	125
18 x 18	445 x 445	0.31	125
24 x 24	594 x 594	0.54	110

Actual Face Size = Nominal Size less 12mm (0.5")

Actual thickness = Nominal thickness less 3mm (0.125")

Code AC3/3a Ref 01/13



AR Axial Fans

Low-pressure axial duct fan

- Available with **AC motors** for **50** and **60Hz**
- Installation in **any position**
- **Noise** and **energy-optimised** impeller

[Find more details in our online catalogue](#)

Flexible

The AR fans are **designed** for extracting air in **low pressure systems**. They can be installed in any position and way according to your demands. This ensures that the fans can be used in a variety of **commercial** and **industrial** applications.

Performance

The **noise-optimised** axial impellers together with the **highly efficient** external rotor motors are designed to ensure high-level performance to **minimise power consumption** and **maximise efficiency**.

Features

Construction

The round casing is made of galvanised steel with powder coating in RAL9005. The **complete** range is provided **with inlet protection grid**. An **outlet protection grid** is **available as accessory**. Depending on type, the fans are equipped with an external **terminal box**, protection class **IP44** or **IP54**.

Impeller

The AR fans use **axial impellers**. These are made of **coated steel**, **composite** material or **aluminium**, are dynamically **balanced** and are paired with corresponding external rotor motors.

Motor

AR fans are equipped with an **AC external rotor motor**. The motors are suitable for **50Hz** and **60Hz**.

Motor protection

The **AC** motors are equipped with prewired integral **thermal contact** with leads to be connected to a **motor protection unit**.

Control

The **AC motor** can be controlled by **5-step**, **stepless** speed regulator or **frequency inverter**.

Installation

The AR fans can be installed in **any position** in the **duct** in **indoor** environments.

Technical parameters

Nominal data

Voltage (nominal)	230	V
Frequency	50	Hz
Phases	1~	
Input power	600	W
Input power kW	0.6	kW
Input current	2.9	A
Impeller speed	1390	rpm
Air flow	max. 2.028	m ³ /s
Air flow at max. efficiency	1.39	m ³ /s
Specific ratio	1	
Capacitance of capacitor	14	µF
Temperature of transported air	max. 70	°C
Max temperature of transported air, when speed controlled	70	°C

Protection/Classification

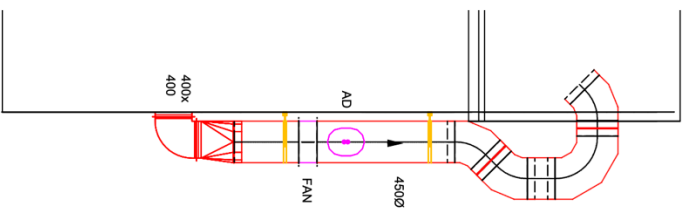
Enclosure class, motor	IP54
Insulation class	F

Data according to ErP

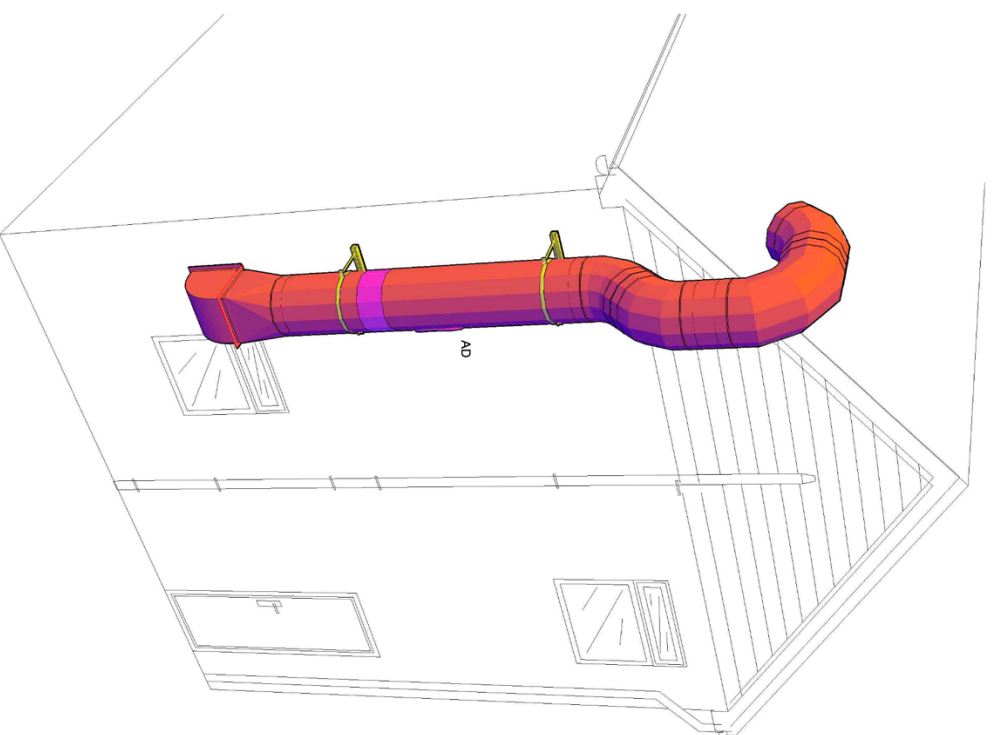
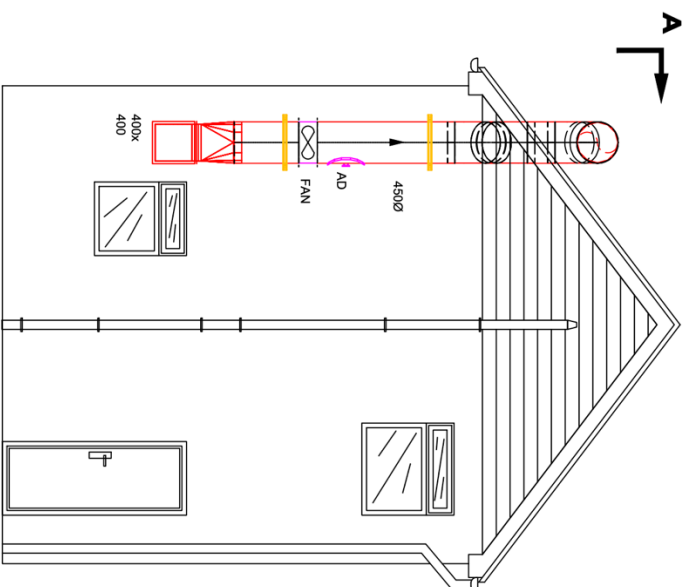
ErP ready	ErP 2018
Measurement category	A
Efficiency grade	41.8 η_{actual}
Efficiency, static	34 η_{statA}
Target efficiency grade ErP2013	36 $\eta_{target2013}$
Target efficiency grade ErP2015	40 $\eta_{target2015}$

Dimensions and weights

Duct dimension; Circular, inlet	450	mm
Duct dimension; Circular, outlet	450	mm
Weight	17.4	kg



Section A



ADAPT
 Mechanical ■ Electrical ■ Ventilation ■ Fabrication

PROJECT: LEICESTER HOUSE		
DATE: 15/04/26	SCALE: 1:50@A3	
DRG NO: LH-01	REV: 1	
DRAWN BY: RE	DO NOT SCALE	

