Development Management Regeneration and Planning London Borough of Camden Judd Street, London WC1H 8ND 09 November 2015 Our ref: S.A/11-2015/DSEVS Your ref:

Site Reference:

33-35 Woburn Place, Bloomsbury London WC1H 0JR

Design and Specifications of Extraction Ventilation System

Food processing and odour characteristics

- The operator's food will process is primarily for freshly prepared, fried and baked produce with light grilling.
- The odour and grease characteristics rising from operator's food processing would qualify as moderate concentration.
- The standard kitchen consisting of two ovens, two chip fryers and one flat grill the moisture load and grease/smoke content for these cooking types qualifies as medium.

Kitchen extraction system

The kitchen and extraction system will be located inside of the building.

There will be no duct work installed externally.

The premises located at the ground floor of seven storey building. Kitchen and extraction ventilation system after canopy and grease filters (carbon filter, electrostatic precipitator, odour neutraliser and fan motor units) will be fitted inside the premises. The concept is to eliminate cooking odour and smoke inside of the premises and vent 90% filtered extract to the roof level and discharge the extracted at the same level. The proposed system meets noise criteria set within the **BS4142 method for rating industrial noise affecting mixed residential and industrial areas guidance** which indicates that levels at nearby noise sensitive receivers should be limited 5dB(A) below the local area background noise level.

Minimum ventilation rates

An internal ambient air temperature of 28° max.

Max.humidity levels of 70%

Dedicated make up air system to be approximately 85% of the extract flow rate.

Min.air charge rate of 40 per hour.

<u>Filtration</u>

Canopy Hood Details

Minimum requirements for canopy

Velocity requirements

Light loading – 0.25m/s (applies to steaming ovens, boiling pans, Bains Marie and stock-pot servers)

Medium loading – 0.35m/s (applies to deep fat fryers, bratt pans, solid and open top ranges and griddles)

- Size : 2.29mt stainless steel canopy.
- Dimensions : W:2.298mm x D:600mm x H:700mm

Ventilation canopy constructed from 1.00mm thick satin finish stainless steel to comply with the food hygiene requirements. The canopy also constructed with 50mmX25mm perimeter condense channel completed with removable grease collection drawers. Washable baffle filters are included. All joints and seams shall be liquid tight.

 \checkmark The canopy should be cleaned on a weekly basis.

3X Stainless Steel Baffle Grease Filters (Please see attached technical brochure)

Technical

- Baffle Grease Filter Face Velocity 1.5m3/s
- Size: 594mm (W) x 594mm (L)
- Nominal to Actual size: less 12mm on H & W and 3mm on Depth

- Kitchen Canopy Filters, Standard and Non Standard - Effective Grease Removal

- Mirror Finish Stainless Steel, Grade 430 Easy Clean Rivet Free Construction
- Rattle Resistant Rigid Long Lasting Construction Fold Flat Handles, and Grease Drain Holes

Application:

The Airclean **Baffle Grease Filter** reduces fire hazard in commercial kitchens with the unique design concept of non-grease loading. Interlocking baffle walls restrict the passage of flames through the grease filter and into the ductwork, whilst utilising centrifugal forces to remove grease from the air stream.

The **Baffle Grease Filter's** smooth surface enables deposited grease to run off via the drainage holes to grease collecting trays in the casing, minimising build-up, and keeping duct clean requirements to a minimum.

Electrostatic Precipitator:

<u>1X ESP 3000E Electrostatic Precipitator</u>. (Please see attached technical brochure)

- These highly efficient units can remove particles small as 0.01 micron at an efficiency of 90%. This equipment would be used before the O.N.100 in systems with a high 'carry over' of grease or smoke. Sound Level : 0dB(A).
- ESP module and other in line abatement should be cleaned every 2-6 months.

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T R A I N I N G & C O N S U L T A N C Y

<u>1 X O.N 100 Odour Neutraliser</u>

The equipment is high tech machine, designed to neutralise odour laden air in the exhaust ducts of restaurants and commercial cooking premises. The equipment operates with special chemical specifically produced to counteract and neutralise cooking odours. *(For detailed technical information please see O.N 100 Odour Neutraliser brochure attached).*

Sound Level : 0dB (A).

<u>1 x Multicarb Activated Carbon Discarb Unit</u>

Activated Carbon filters to control grease, smoke and odour emissions from kitchens minimizing any impact they have on their surroundings.

The unit will be used for ``elimination of cooking odors``. It is also used for; removal of kerosene exhaust fumes, general odour removal, smoke removal, neutralization of ammonia and its derivatives, removal of formaldehyde, removal of airborne pollutants and contaminants, removal of acid gases (H2S, SO2, NOX, HCl).

Brand: Jasun Multicarb Activated Carbon Discarb Unit (Please see attached brochure).

Grade: AC208 Efficiency CTC 65%,

Sound Level: 0dB (A).Specification: 6 celled activated carbon discarb unit will be used in the system.The product code no: DC242424-KIActual size (h x w x d): 24x24x24(inch) / 594x594x597(in mm)



Multicarb Activated Carbon Panel

The disposable activated carbon filter panel can be used in odour reduction applications. They can be fitted into duct mounted casings to provide the required contact time and airflow.

To be used in air conditioning plants for the removal of smells and odours in public buildings, airports, offices and industrial premises. Mainly used in kitchen extract systems.

These filters are designed for ease of installation and incorporated into air duct systems. They can be used on both supply for purifying incoming air and can be used on the extract to remove toxic gasses and odours generated within a process. These are fully disposable (discarb) multi panel modules which allow for simple integration into filter housings.

Brand: Jasun Multicarb Activated Carbon Discarb Panels (Please see attached brochure).

| Specification | : 5 pcs disposable activated carbon filter panels will be used in the system. |
|-------------------------|---|
| The product code no | : {grade}-6-2424 |
| Actual size (h x w x d) | : 24x24x24(in inch) / 594x594x597(in mm). |
| | |

Maximum Operating Temperature: 40 Deg C / Maximum Operating Humidity 80% RH

- ✓ Recommendations for maintenance of odour control system include:
- ✓ System employing fine filtration and carbon filtration.
- ✓ Change fine filters every two weeks.
- \checkmark Change carbon filters every 4 to 6 months.
- ✓ Use a system employing ESP and other in line abatement.
- ✓ Clean every 2-6 months

Fan Motor

Powerful box fans offering for high volumes and high pressure. A fully speed controllable boxed backward curved centrifugal fan range suitable for indoor or outdoor use rated IP55 (weatherproof) able to handle cooking grease and other airborne pollutants.

Application:

500 mm fans are suitable for ventilating most spaces offering good volumes even with long duct runs whilst able to be used in line or with the outlet at right angles to the inlet. Can be either supply or extract fans for all applications including commercial kitchens, offices, workshops and retail units etc.

The fan motor will be located inside of the building.

Specifications

<u>**1 x Helios GBW 500/4 Gigabox Centrifugal Fan** (Please see attached brochure Pages; 176,186,187).</u>

- Complete with 500 mm circular duct connections and flexible connections.
- Fully speed controllable
- High performance up to 1.889 m3/s.
- Powerful backward curved centrifugal fan ideal for all applications.
- Can be changed from straight through to side outlet on site
- Quality assured by the manufacturer ISO9001
- The efficiency and sound characteristics of the centrifugal fans are often restaurants, café shops and takeaways to discharge heavy and medium level exhaust air.
- Centrifugal fans have the advantage of the compact design and straight-through airflow as well as the preferred acoustic characteristics and high pressure capability.
- They are high total efficiency, small energy consumption and low sound levels using high performance impellers.

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| Fan Type | : Helios GBW 500/4 Gigabox Centrifugal Fan Extraction Motor |
|------------------------------|---|
| Supply | : Single phase 240 V/ 50Hz / 1ph |
| Size | : 670mm x 670mm x 670mm overall square type 620mm x 620mm inside frame |
| | |
| Speed | :1350min ⁻¹ |
| Motor Rating | : 1.38Kw |
| Motor Current | : 6.4 Amps |
| Maximum air flow temperature | : 45+°C |
| Sound Level | : 45dB(A) at 4m |
| Air flow volume FID | : 1.94 m ³ /s @ 200Pa 1.57 m ³ /s @ 350Pa |
| Suitable Controller | : TSW 7.5 (Please see attached brochure). |

A typical application where this fan is commonly used is in the catering industry where a high level of filtration is required, usually the result of fitting odour control via Pre-Carbon Filters.

- Fully assembled
- Fully speed controllable
- Can be used in any non-hazardous environment
- Suitable in temperatures from -40°C to 50°C
- Low to high air volumes
- Low to high static pressures

As the extraction ventilation unit will be located inside of the building, this reduces to noise level between +/- 10 dB (A) to 15dB (A). <u>The noise level reduces in total: 35 dB (A) ~ 30dB (A)</u>

If required the applicant ready to cover the motor fan unit with <u>**``Acoustic Mat``**</u> to lower the noise level.

All above mentioned extractor ventilation system equipment shall be installed c/w anti-vibrating mounts as per manufacturer's recommendations.

✓ Fan, motor cleaning and anti-vibe check to be carried out every 3 months.

Discharge & Noise Control:

The ductwork after the canopy; Electrostatic precipitator, odour neutraliser, carbon filter, motor and fan fitted the inside of the building to minimise the noise level and provide conformity to existing environment.

- The (A3) use kitchen will operate during trade hours only: Between 07:00 to 23:00. Food orders to be taken until 22:30, last serving until 22:45, kitchen cleaning up until 23:00. The management will ensure no noise nuisance will be generated during the operational hours to not effect neighbouring residents.
- All above mentioned extractor ventilation system equipment shall be installed **c/w anti-vibrating mounts** as per manufacturer's recommendations.
- Ventilation equipment is to be designed and installed to avoid noise and vibration nuisance affecting neighbours. As the fan and motor sited inside the building and fixed on anti-vibration mounts, joined to

indoor ductwork using flexible couplings preventing the transmission of vibrations to the structure minimising indoor and outdoor noise.

• External aluminium weather louvre flue will be located at front.

The recommended cleaning period for indoor extract ductwork is:

- ✓ Heavy use 12-16 hours per day 3 monthly
- ✓ Moderate use 6-12 hours per day 6 monthly
- ✓ Light use 2-6 hours per day annually
- ✓ The External aluminium weather louvre a full deep clean every 6 months after installations and every 9 months thereafter should be cleaned to maintain the maximum efficiency of the extraction system.

Accessories:

- TSW 7.5 electronic speed controller. (Please see attached brochure).
- 1Ph starter c/w overload –Flanges -Mounting Feet -Flexible Connections
- Anti-vibration mounts Silencers Guards Back draught dampers

Maintenance (General)

Proprietors of commercial kitchens have a duty to ensure that the ventilation system serving the respective premises are maintained and operated effectively. Good maintenance is a prerequisite for ensuring that a system complies with best practicable means under statutory nuisance provision and will form a key element of any scheme designed to minimize harm to the amenity under planning regulations. Good maintenance is required by the food hygiene regulations and will also minimize the risk of fire.

<u>Scale</u>

-Attached, I submit the architectural drawings of the premises both existing and proposed scaled at 1/100@A3. Proposed ground floor plan and proposed section architectural drawing shows the location and position of the extraction ventilation system.

Design, construction and layout of extraction ventilation system of the (A3) use hot food breakfast café restaurant will fully comply with current building, environment health, health and safety and fire regulations.