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Company reg: 14042089 **Our Ref: 1687UB79JD60-62**

Canopy Design Specification for: Sayful Islam

Date: 2nd January 2024

1. **Specification Site Address: 60-62 Byron Way, West Drayton, UB7 9JD**

Dear Sir,

Re: Proposed Kitchen Ventilation

We would like to confirm the design specification for canopy supply and extract system at the above address as follows: - There will be separate supply and extract systems connecting to a new canopy 3600mmx1200mm stainless steel 304 grade 1.2 gauge canopy over a gas fired commercial Char Grill 2 burners with deep fat fryer and a 9 burner gas cooker.

The Supply/Extract ductwork and canopy shall be manufactured in accordance with DW144 & DW172 specifications and incorporate the following: -

Design Parameters:

The design has been based on the following flow rates: - The Extract volume has been calculated at 2.5m3/s against a system resistance of 400pa and a Supply volume of 1.87m3/s against a system resistance of 250pa. Canopy Detail: 1 No 3.6m x 1.2m x 0.5m.

Canopy Detail:

1 No 3.6m x 1.2m x 0.5m Wall mounted canopy is to be installed over a range of equipment. The Canopy shall be manufactured in 2 sections and have an extract and supply plenum. The extract plenum shall contain 8 No 500mm x 400mm grease separators. The canopy shall be constructed from 1.2mm 304 grade stainless steel.

The Supply air in:

This is the air in to replace 80 to 90 percent. This is a wall mounted inlet in the kitchen wall, with a separate air in supply plenums having 1 No front facing 450mm by x 450mm perforated mesh grilles.

Extract Ductwork:
The system shall be completed with canopy mounted grease separators and baffle filters. Extract ductwork shall connect to the top of the canopy with 2 No extract connections to a header duct. This will turn 90 degrees horizontally then connect alongside right hand wall to a fan activated carbon box, with an odour abatement control unit attached and mesh filters. This will connect to a System air MUB/T box fan and outlet silencer. We will be including silencers before and after the connection with anti-vibration mounts. This duct work will exit into the room on the right as you face canopy (as shown on 2d visual), then ducting will exit to outside wall, turn 90 degrees vertical up alongside external wall of building, fixings on ant vibration mounts and bracket supports. The duct run will be terminating 1m above eaves.

The duct work will be powder coated externally matt black, it is discrete and out of the way and will discharge into atmosphere via high dispersion cowl.

External duct route visual

Supply Ductwork:
Supply air is to be drawn in through a 450 by 450mm external side wall (as shown on visual above as air in) duct grill and pass through a G4 filter housing complete with 2

No 300x450 filters, Systemair 450 dia. prio inline fan complete with inlet and outlet silencers and connect to the inlet box inside kitchen wall.
This is separately controlled via controller.

Cleaning and maintenance The canopy and grease separators should be cleaned on a daily basis. Supply filters to be changed every 6-8 weeks. The canopy and associated ductwork should be cleaned as and when required dependant on usage, we would recommend the canopy and ductwork receive a full deep clean every 6 months (minimum) and every 6 months thereafter by a professional cleaning company to maintain the maximum efficiency of the extract and supply systems.

2.Canopy typical photos

3. Fan Details

Multibox Thermo fan for medium temperatures up to 120 °C in continuous operation, reliable, for easy and direct installation in duct systems. Casing frame construction made of aluminium hollow profiles and plastic corners for highest impact resistance.

Double skin galvanised steel panels, thermally and sound insulated with a 20 mm layer of mineral wool, smooth inner sides. Removable service panel. Bottom panel is shaped as a grease tray and incorporates a pre-mounted 1" drain plug. Free-running, backward curved circular impeller made of aluminium.

Impeller acc. to VDI 2060, balancing quality Q 6.3, dynamically balanced in two planes acc. to ISO 21940- 11.. Internal rotor motor, frequency inverter control, standard motor IE2 (IP55), outside the air flow. Integral thermal contacts with leads to a motor protection device. Terminal box fitted on the motor. Pre-assembled isolator switch.

Voltage (Nominal) 400 V
Frequency 50 Hz
Phase(s) 3~
Input power 2,415 W
Starting current 32.4 A
Input current 4.2 A
Impeller speed 1,445 r.p.m.
Air flow max 3.251 m^3/s
Temperature of transported air max 120 °C
Sound data Sound pressure level at 3m (20m^2 Sabin) 55 dB(A)

Extract Fan – System air MUB/T 062 560 D4IE2 high temp box fan complete with inverter controller. See details attached. • Supply Fan – System air Prio 450 diameter 3ph inline fan complete with controller see attached detail Fans are to be isolated from the building structure using anti vibration mounts or pads as appropriate.

The weight of the fan as it is an enclosed self-isolated unit with its own sound proofing is 90Kg

The Anti vibration mounts on each corner supporting the fan is 22.5Kg totalling of 4 which will handle the 90Kg, handling any deflection.

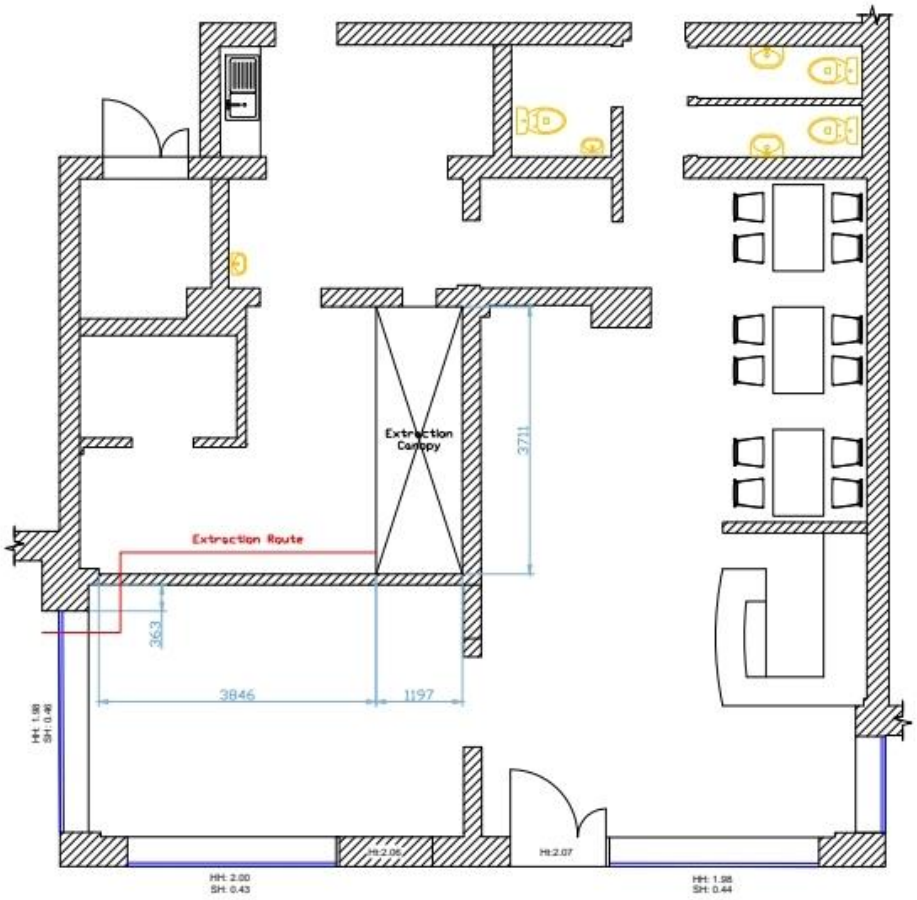
There will be no vibrational effect to the structure of the flat roof where it wil be situated with the anti-vibration mounts and rubber footings which we will use to support the fan.

These fans are the best in its class for noise and vibration.

4. Ducting Details

Ductwork is to be constructed from galvanised mild steel sheet, folded, lock formed and of flanged construction in accordance with specifications DW 144 and DW.172.

3d canopy layout visual of kitchen with header duct



2d block layout of kitchen with in building

5. Separator Filter Details

It is universally recognised that there is an increasing need to maintain & improve hygiene standards & reduce grease build up within kitchen canopies. The Grease separator filter accomplishes this by trapping the large particles of grease at source and finer particles through its design of interlocking blades, these provide a tortuous route for the passage of air through the filter by creating two rapid 180º air direction changes simultaneously. The grease molecules having a far greater inertial force than air impact themselves on the vanes. A series of vertical Stainless Steel or Aluminium vanes are housed in a channel frame, with each of the baffles strategically aligned to provide the highest potential for grease removal. Due to the smooth nature of the vanes the grease naturally runs downwards, through the drainage holes and into the collecting trays normally provided within the canopy holding casings.

Construction The Grease separator filter range is manufactured from 304 Stainless Steel and is robustly constructed with filter removal handles fitted as standard. It is imperative that this product is regularly cleaned – according to use. This may be accomplished by steam cleaning, washing in a dishwasher using conventional detergents or cleaners.

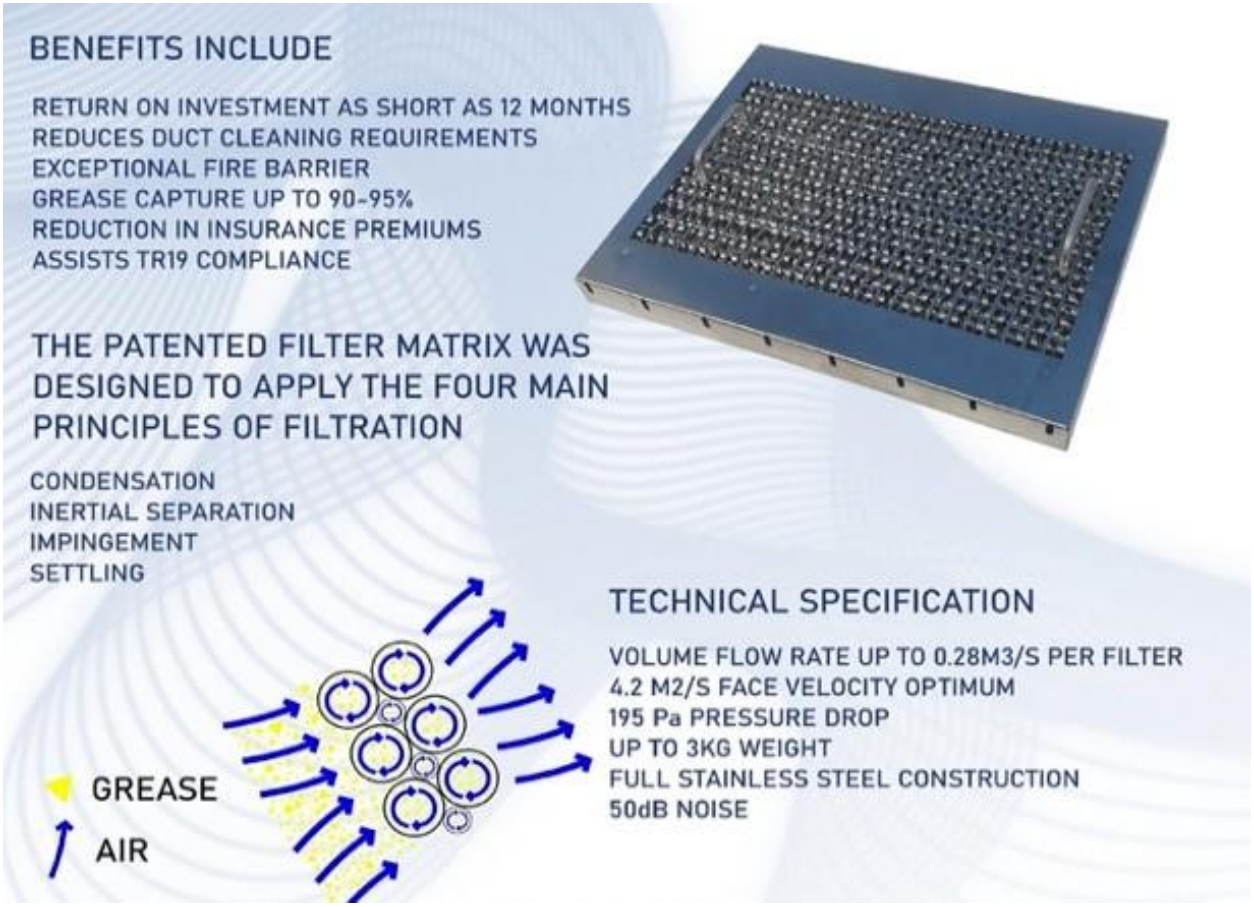
Range Grease separator filters are available in a large range of standard sizes; they can also be manufactured in non-standard sizes however the filter depth is always limited to 47mm due to the nature of the filter.

*Note separator filters may be used at higher rated capacities whilst retaining their efficiency; however, it should be noted that this will increase their resistance to air. Separator filters must always be used with the blades running vertically how to remove filters from canopy

6. Odour Abatement

Technical Information

Ozone Output	36g/hr ozone output
Housing dimensions	300mm wide x 300mm length x 150mm height
Housing material	Stainless Steel powder coated white/grey
Duct work connection	100mm circular
Volume flow rate in ductwork	Up to 3m3/s per unit, subject to cooking odours.
Air residence time inside chamber	>0.1 seconds
Pressure drop	N/A
Weight of unit	5Kg approx.
Two individual Light Indicators	Green Power On / Green Ozone On
Electrical requirements	240V / 1 ph / 50/60Hz
Power requirements	168W
Safety	Built in Air pressure switch



7. Odour Control Activated carbon filter.

The Airgard carbon filter is the ideal solution for a modular approach to fume removal.

Activated carbon dates back many years. In the First World War, gas masks were filled with activated carbon to remove chlorine gas. Today Longar produces a wide range of carbon filters to deal with many noxious fumes and gases, whilst maintaining high levels of strength and low pressure loss.

Manufactured from a number of carbon biscuits held in a vee formation within a corrosion-proof metal casing, these are sealed into the frames of our filters using polymer, which eliminates the possibility of any air bypass around the carbon.

Type 8 carbon filter features:

- High quality carbon – all grades available
- Robust modular construction
- High carbon content
- Special sizes available upon request
- Low pressure losses

Please note: Carbon filters are designed to remove fumes and odours and are therefore NOT suitable for the filtration of fine particles and dust. If left unprotected, the life of the carbon within this unit may be severely reduced. However, by using pleated and bag filters to the correct grade, the filters should be sufficiently protected.

Longar's galvanized carbon filtration housings encompass the activated carbon filters, along with pre-filtration. The activated carbon filters serve the purpose of filtering odour and gas from all kinds of applications, from commercial kitchens to gas turbines, whilst the pre-filtration will filter grease, dust, oil mists and remove smoke from the air.

Pre- filters in the carbon box, we left one expanded metal mesh washable filter in the center and fitted two V- Pleat disposable filters on either side, so that you can monitor any carryover of grease and replace accordingly.

It would be more beneficial to change all of them to V- pleats and change them every two –three weeks this will ensure a longer carbon filter life on the filters and its good practice to keep clean.

8. Silencers Lindab - Model SLBGU Type circular silencers.

SLBGU - Circular straight silencer with baffle

Attenuator - circular straight

9. Cleaning and Maintenance Details Canopy and Filter Maintenance

a. Grease separator filters to be cleaned daily and as manufacturer's recommendations.

b. Grease trap and condense channel must be cleaned daily.

c. Canopy to have professional deep clean every 6 months to maintain warranty. Pre-Filter Maintenance • Supply air pre filter must be changed every 8 weeks. General Cleaning • Using a damp cloth with mild detergent diluted in water wipe all stainless steel services. • Once dry using a mixture of 50% baby oil and 50% white spirits mixed together, applied to a non-abrasive cloth, lightly wipe down following the grain to maintain the stainless steel.

DO NOT USE ANY ABRASIVE MATERIAL OR CONCENTRATED CHEMICALS TO CLEAN
i.e. mild steel wire wool cleaners

A Kalam
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