Commercial Kitchen Extraction & Ventilation Systems Specialists
ESTABLISHED 2005

**Oriental Dragon**
**100 Cleveland Street**
**London**
**W1T 6NS**

**KITCHEN EXTRACTION SYSTEM PROPOSAL**

**Customer Contact:** **Nicole Zhou**
**Customer Telephone:**
**Email Address:** **nicole83@hotmail.co.uk**

**Date:** **5th April 2016**

**Our ref- P-108765**

Fan Rescue was asked to carry out a site survey and put together a proposal for the kitchen extraction and ventilation system at the above address

The building comprises of one  floor of restaurant space, ground floor.

There is currently two canopy/hood in the kitchen area , main kitchen canopy is connected to the existing ductwork system which runs to the top of the building and terminates on the flat roof , the system don't have any attenuation or filtration system, there is a mechanical makeup air system on the roof , the second canopy which serves the BBQ , terminates on the flat roof.

**New Extract fan/filtration system /attenuation and Passive make up air system**

On the flat roof,  the existing ductwork system 400mmx400mm  , will be connected  to a high odour filtration unit , carbon filter unit , with a built in disposable pre-filter G4 (Please see attached tech info ) , recommended to be replaced once every 3-4 weeks, depending in usage  and 50kg( 1No 24x24x24) of extra duty active carbon to remove odour, carbon cells mounted / housed in the external duct riser with dwell time of 0.1 - 0.5 sec , disposable replaced every 12 months(Please see attached tech info ) . The filter box will then  connect to a new Helios GBD 630/4  extract fan unit (Please see attached tech info On the fan ) Fan unit will be connected  using flexible connectors and Qty 2 off Acoustica R02 6-1200 (Please see attached tech info On the fan ), 1200mm Long rectangular attenuators positioned either side of the fan unit and to achieve the insertion loss, Fan unit will also be mounted on to a anti vibration platform  to eliminate  any noise and vibration  levels, the ductwork from the fan unit will raise and terminate 1 meter above the eaves/roof level via high velocity discharge nozzle as shown on the CAD drawing.

The second Canopy Ductwork will also be connected to the proposed system as shown on the CAD Drawing.

Remove the existing mechanical makeup system, proposed Make up air will be provided by a Non motorised system Via louver grill from the rear of the building as shown on the CAD drawing.

The proposed system will be manufactured and installed subject to in accordance with DW 144/171 specifications.

Attenuation has been selected so as to provide a system rating level of at least 5 dB(A) below the lowest existing background noise level for the proposed operating hours and when extrapolated to the nearest noise sensitive neighbouring residential property.

The proposed system will comply with ARM Acoustics Report as per report , ref :ARM 177-01 and as per their below recommendations;

Mitigation

In order to control casing radiated noise from the Helios GBD630/4 fan unit it is necessary to upgrade the casing with acoustic panels. Calculations have been carried out in order to determine a form of construction adequate to control casing radiated noise to an appropriate level. The application of the mitigation measures set out below are anticipated to achieve a specific noise level due to the noise radiated from the casing of the fan unit of LAeq,T 34 dB.

The specification is based upon an enhanced version of the GB acoustic panels provided by Helios which are understood to bolt to the fan casing using existing fixing holes. The manufacturer should be contacted to finalise specification of the acoustic panels.

Acoustic panels to Helios GBD 630/4

Additional cladding panels should be affixed to each side of the fan unit and should comprise an inner skin of solid 1.0mm thick galvanised sheet steel, an infill of 50mm thick controlled density mineral wool or fibre glass (nominally 60kg/m3), 2no. layers of 12.5mm plasterboard with an outer skin of solid 1.0mm galvanised sheet steel. The infill shall be inert, non-hygroscopic, rot proof, vermin proof and have a Class 1 rating for spread of flame in accordance in BS 476: Part 7, with appropriate protection provided to the plasterboard to prevent water ingress

Acoustic duct flexible connections

In order to prevent breakout from fan flexible connections, acoustic duct flexibles shall be constructed from barrier mat with a superficial density of 10kg/m2. Where a fire rating application is required then the barrier mat shall be uprated to have a Class 1 rating for spread of flame in accordance with BS476 Part 7.

Rectangular and circular flexibles shall be provided with flanges, or where specified galvanised sheet steel spigots, which shall be fixed and sealed to the barrier mat material.

Acoustic lagging

Any ductwork between the fan and attenuator should be uprated to 1.2mm thick galvanised steel. In addition, acoustic lagging should be provided to such ductwork between the fan unit upto and including the attenuator. The acoustic lagging material shall be 10kg/m2 superficial density with a thickness of approximately 30mm. The material shall be laminated with two outer layers of 100kg/m3 density cellular foam with an intermediate lead barrier, externally faced with impermeable aluminium foil. The composite material shall be Class 0 Building Regulation E15 fire rated.

Acoustic lagging shall be applied to ductwork using a fire retardant contact adhesive applied to both surfaces. Joints shall be overlapped by a minimum of 100mm and sealed using aluminium duct tape.

**Parts**

1x Helios Extract fan 630GBD/4
1x Speed controller
2x Acoustica R02 6-1200,  1200mm Long rectangular attenuators
1x 24"x24"x24" Extra duty 50kg  Carbon Filter
1x carbon filter casing box built in with a pre Filter section
1x Pre filter
2x duct reducers
2 x flexible ductwork connectors
1x high velocity discharge nozzle
1x Louver Grill  for the makeup air system

We hope this is of assistance and await your further instruction.

Yours sincerely

Irfan Nakip
Operation Director

Fan Rescue Ltd
Registered Office 44C Leyton Industrial Village, Argall Way, London, E10 7QP
Tel: 0203 3082 936 • E-mail: enquiries@fanrescue.co.uk • www.
fanrescue.co.uk
Company Number 5954579 VAT Number 906911132