

Building Standards Kitchen Ventilation Policy (BSKVP)

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Building Standards Kitchen Ventilation Policy (BSKVP)

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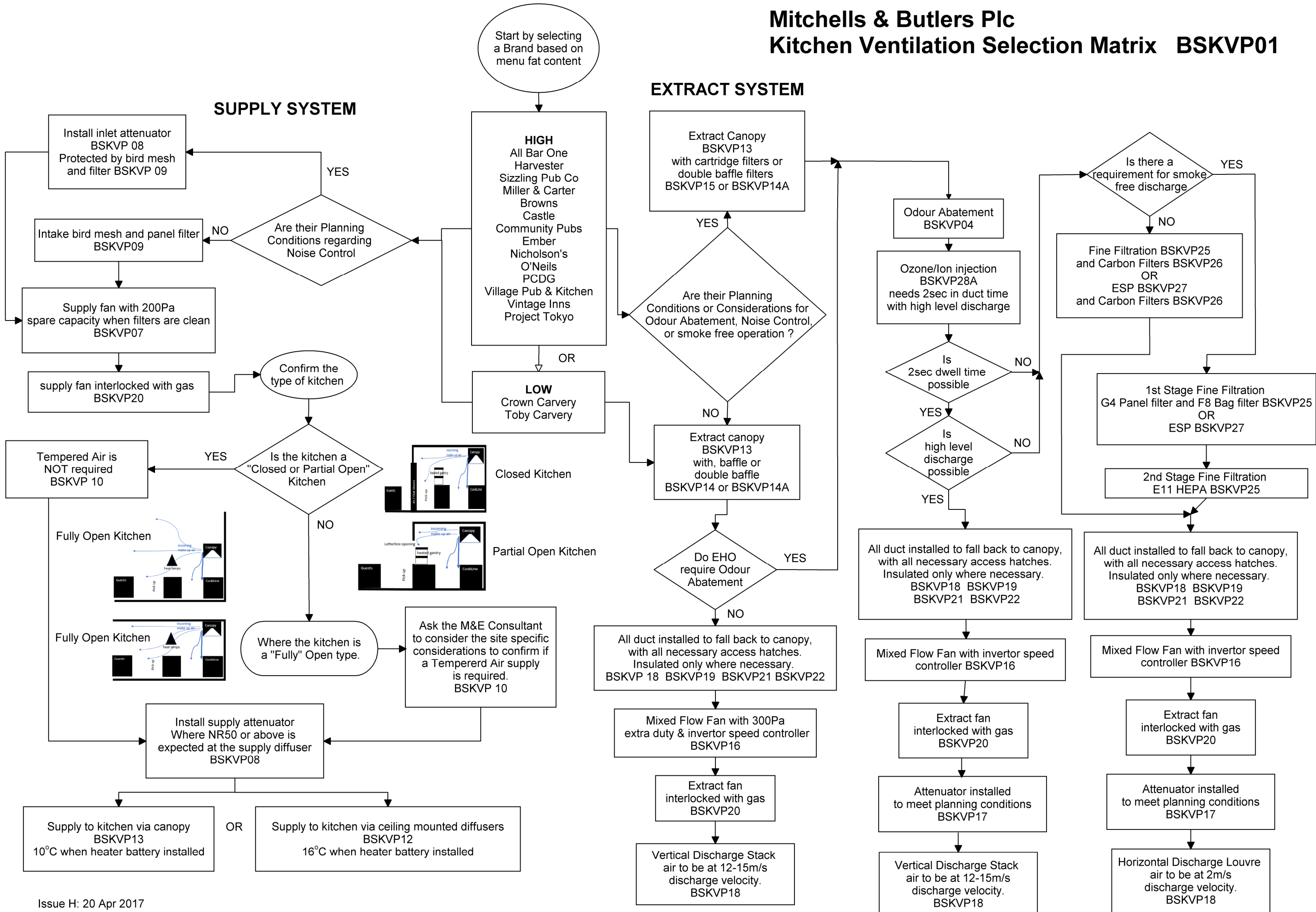
AREA : Commercial Kitchen

See also schematic drawing A1879/sk8 rev D

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Mitchells & Butlers Plc Kitchen Ventilation Selection Matrix BSKVP01



TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 02) Supply Ventilation Policy Statement
AREA:	Commercial Kitchen
REV:	E : 17 April 2017

SPECIFICATION:

Fresh air shall be provided to the kitchen space from outside, connecting via square section galvanised mild steel and/or spiral wound ductwork.

The supply ventilation shall include:-

Inlet i.e. mono pitch weatherproof louvre or cowl complete with bird mesh

All ductwork

Pleated panel filter G4. (BSKVP 09)

Supply fan c/w the necessary guards, belts, pulleys, and flexible connection to adjoining duct work. (BSKVP 07).

Attenuators as necessary to attain the required noise levels as set out within Planning Conditions.

Local isolators.

Grilles and diffusers that are not included in the canopy. (BSKVP 12)

The system shall provide fresh air to the kitchen at a maximum of 85% of the total kitchen extract volume flow rate.

In accordance with DW/172 the supply air may be tempered.

Supply air shall be tempered where the food or guest experience will be compromised.

The selection matrix, at the front of this document, shall be used to determine when the supply air is to be tempered.

The supply air volume flow rate may be an increased percentage of the extract volume flow rate in situations where the remaining 15% is unlikely to be naturally available to the kitchen. This might arise where the kitchen is on a different floor level to the front of house trading area.

The supply air installation shall have means to retrofit heating and cooling coils for future requirements.

In summer mode, the system shall supply air at ambient temperature.

The supply make-up to the kitchen shall be located in positions which will avoid direct draughts onto food holding areas and preparation benches, in particular "Alto Shamm" appliances.

Where condensation may occur within the supply duct it shall be insulated as appropriate and relevant to its location (see standard M&E/ Building Regulations specifications).

CONSIDERATIONS:

- The kitchen extract and supply systems shall be interlocked with the kitchen gas solenoid valve in accordance with BS: 6173.
- The System shall be designed in accordance with DW/172.
- The ductwork shall comply with DW/144.
- The System shall follow the guidance set out in TR/19, noting MAB requirements (BSKVP 21)
- Thermal Insulation.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 03) Extract Ventilation Policy Statement
AREA:	Commercial Kitchen
REV:	D : 14 February 2017

SPECIFICATION:

The Contractor shall install off each canopy an extract system to remove contaminated air from the canopy to outside with discharge stacks being vertical.

Where discharge can not be vertical the Brand Manager/Design Coordinator shall be made aware for the contractor to receive instruction as to the additional requirements.

The kitchen extract shall include:

All ductwork,

Extract fan c/w guards, belts, pulleys and flexible connection to discharge spigot.

Local Isolators

Attenuators

The Contractor must ensure that at all times during operation, the extract volumes required for combusted air/fumes are achieved.

In the absence of the extract volume flow rate from the Catering Contractor the Contractor shall contact the Catering Contractor to determine the catering equipment that is to be installed and to verify which appliances are heated by gas or electricity.

All plant equipment associated with the Catering Kitchen Ventilation system shall be designed and installed to enable ease of access for cleaning and maintenance.

Ductwork routes and terminations shall be co-ordinated with other services and trades. No part of the system shall be installed without the agreement of the Design Coordinator.

The kitchen extract system shall only be thermally insulated and lagged to prevent condensation where it may case a hazard i.e. the warm duct passing through a cold room.

Drains shall be provided at the base of all ductwork rises.

Drain/Catch pans shall be installed below all bend outlets and below all items of plant that require regular access.

Volume control dampers shall not be installed.

Fire rated ductwork shall be installed where kitchen extract ductwork is routed beyond the kitchen fire zone.

The Canopy Extract System must be dedicated and independent of all other extract systems.

Canopy filters shall be appropriate for the application and shall NOT be Mesh type.

CONSIDERATIONS:

The kitchen extract and supply systems shall be interlocked with the kitchen gas solenoid valve in accordance with BS : 6173.

It is Contractor's responsibility to determine the correct extract air flow requirements and to ensure that the installation and design meet the requirements of DW/172.

The System shall be designed in accordance with DW/172.

The ductwork shall comply with DW/144.

The System shall follow the guidance set out in TR/19. Noting MAB requirements (BSKVP21)

The Contractor shall liaise with the area duct cleaning contractor to ensure the correct cleaning access installed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 04) Odour Control Policy Statement
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

As 'Standard' an odour control system should NOT be installed unless otherwise instructed in writing by the Design Coordinator. The extent of odour control required will vary according to the cooking processes used, cooking equipment, the local EHO and any building restrictions.

The Contractor shall understand that, for client flexibility, the use of the kitchen may change and thus space within the extract ductwork suitable to retro-fit an odour control system in the future shall be allocated.

Retro-fitting future equipment should be such that existing equipment should not need to be relocated to accommodate this.

The Odour abatement system installed should take due consideration of the need to remove grease and smoke to be effective.

The installed equipment and the discharge stack shall be used in combination to attain the odour abatement.

Cartridge filters shall be installed within the canopy where any type of filtration or odour control is installed within the kitchen extract ductwork.

Where odour control is of prime importance the use of *out of main duct UVC generated ozone/ion* injection should be used in preference to carbon filtration.

CONSIDERATIONS:

- The System shall be designed in accordance with DW/172.
- The Planning Conditions and restrictions.
- Ductwork shall comply with DW/144.
- Maintenance Access.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 05) Fire Suppression Policy Statement
AREA:	Commercial Kitchen
REV:	B : February 2017

SPECIFICATION:

As 'standard', canopy fire suppression should NOT be installed unless otherwise instructed in writing by the Design Coordinator.

CONSIDERATIONS:

- The Planning Conditions and restrictions.
- The System shall be designed in accordance with DW/172.
- Insurance Requirements.
- Landlord Requirements.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 06) Heat Recovery Policy Statement
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

Kitchen extract ductwork systems from High Protein cooking sites shall NOT contain any heat exchanger section.

Where a site is to have particularly clean extract ventilation system a heat recovery exchanger may be considered.

The Contractor shall obtain approval from the Design Coordinator prior to design.

The heat exchanger shall be an unfinned tube type to temper water.

The water supply to the heat exchanger shall be protected from back siphonage in line with the Water Regulations.

The water supply from the heat exchanger shall be protected from over pressure and temperature.

Any extract system that covers a chargrill shall not contain any heat exchanger section.

CONSIDERATIONS:

- The Water Regulations.
- Maintenance.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 07) Supply Fan
AREA:	Commercial Kitchen
REV:	C: 14 February 2017

SPECIFICATION:

Supply fans shall be mixed flow, backward curve centrifugal or axial with either direct or belt driven motors.

All supply fans may be either metal or plastic bladed fans. Motors should have a minimum IP55 rating and be designed to operate comfortably at between -10°C and 40°C at 95% humidity.

The supply fans shall be located as far from the kitchen as reasonably practical. Where possible fans shall be located internally. Fans shall be installed in a manor that future maintenance is feasible. No fan shall be installed externally unless they are readily accessible i.e. without the need for ladders or scaffold to be erected.

Wherever possible fan motors are to be located external to the air stream. Should the fan motor be located remotely to the ductwork the Contractor shall provide sufficient, labelled spare belts within his handover pack.

The Contractor shall design and specify and install all fan ancillaries, including speed controllers, anti-vibration pads/mounts, etc.

All motors shall be IE2 Standard or better as regulations dictate.

Speed control shall be via Electronic Invertor.

Where the variable speed control system is to be installed the invertor shall be supplied by the MAB Direct Contractor, Co-ordinated by the Contractor.

It is the Contractor's responsibility to provide the main contractor with positions, sizes and quantities of all fans and duct or damper access panel positions required.

The fan shall be selected to operate with the filters in a clean state and also in a dirty state. i.e. a minimum of spare 200Pa duty at the design airflow rate.

CONSIDERATIONS:

Fan selected in accordance with DW/172.

The kitchen ventilation supply and extract fans shall be suitable for the application.

The kitchen ventilation supply and extract fans shall be suitable for the mounting location application.

The Contractor shall to their best endeavours ensure that all ventilation systems selected do not create any undue sound levels which may cause a nuisance to adjacent properties or contravene the agreed dynamic sound restrictions which have been enforced by the Client or Planning Authority.

All electrical works shall comply with BS 7671.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

This unit requires PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 08) Supply Attenuator
AREA:	Commercial Kitchen
REV:	A : 14 June 2011

SPECIFICATION:

Attenuators shall only be installed where necessary. The sites planning constraints will dictate the level of attenuation required.

Attenuators within supply ductwork shall be of standard construction, the internal faces being perforated with lagging behind to achieve the sound reduction level required to meet the site conditions.

- The Contractor shall support each attenuator independently and in such a fashion that the adjacent ductwork and joints are not stressed.
- Where possible the inlet attenuator shall be located after the inlet bird screen and filter.

CONSIDERATIONS:

- Access for inspection.
- Local Authority Planning Constraints.
- The fan sound power levels.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 09) Supply Inlet Filtration
AREA:	Commercial Kitchen
REV:	A : 14 June 2011

SPECIFICATION:

The fresh air supply, or fresh air inlets to the kitchen shall have as a minimum a basic filtration unit to provide a minimum of G4 pleated filters.

The filters shall be NOT be manufactured from glass fibre media.

All panel filters shall have the date they are installed written on the "visible" side of each filter case to aid future maintenance.

All filters shall be installed in a suitable housing. The housing shall be constructed such that the installed filters are air tight and all air shall pass through the filter media.

The filter housing shall have a traffolyte label attached/glued to the outside of the housing providing the details of the grades, type, size and number of filters the housing contains.

The filter housing shall be installed with pressure tappings installed across the filter section.

Each tapping shall be mounted on the top face of the relevant duct/housing to minimise the chance of blockage each shall be installed with a cap to prevent air leakage under normal operation.

The Contractor shall measure and record the pressure drop of the newly installed filter to assist in future maintenance.

CONSIDERATIONS:

- EN477

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 10) Supply Heater Battery
AREA:	Commercial Kitchen
REV:	D : 17 April 2017

SPECIFICATION:

The Contractor shall install a heater battery into a kitchen supply system where the air is to be supplied to the room in a tempered condition.

The M&E Consultant Coordinator shall confirm the requirement for the heater battery.

Where the canopy has outboard supply air it shall be tempered to 10°C minimum.
Where supply air is distributed via ceiling mounted diffusers it shall be tempered to 16°C.

The heater battery shall have an interlock with the supply fan to prevent the heater battery from operation/overheating when the fans are not operating, there is no airflow.

Control shall be by temperature detector. Located at a minimum of half way between the heater battery and the supply connections.

The control panel shall be locked. Internally it shall allow the supply temperature to be adjusted.

Where the heater battery is to be electric, it shall be wired on a separate circuit.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

Electrical Heater batteries shall be staged with a minimum of three steps. The electric heater battery is to be controlled by thyristor control to allow variable heat output and temperature control.

Gas fired heaters shall be indirect type shall be staged with a minimum of two steps. The modulated control shall be used to regulate heat output and temperature control.

LTHW heater battery's shall be piped with a 3 port modulation valve to control temperature through the coil.

LTHW heating coils shall have a frost protection control to prevent freezing.

All equipment shall be suitable for its location and application.

CONSIDERATIONS:

Suitable Gas Supply.

Suitable Electrical Supply.

Suitable LTHW Supply.

DW/172.

Access for inspection.

All electrical works shall comply with BS 7671.

Sized to suit duty with suitable steps to allow seasonal operation.

Gas fired units require flues to be sited to an external wall with suitable combustion and ventilation taken to the unit.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 11) Supply Ductwork
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

All ductwork shall be constructed as specified in HVCA DW/144 with a minimum thickness of 0.8mm. No other ventilation systems shall be connected to the catering supply system.

Where possible ductwork shall be circular. Where square ductwork is necessary radius bends shall be used.

Ductwork shall be sized to achieve the velocities as detailed in DW/172.

A suitably rated fire damper shall be installed in the SUPPLY air duct work where any fire barriers are compromised. This will prevent the supply air duct acting as a natural exhaust route for the fire.

Should the supply intake and extract discharge ducts be at roof level, the supply is to be positioned as far from the extract as practical, 3.0m minimum.

CONSIDERATIONS:

- DW/144
- TR/19, note MAB requirements (BSKVP21)
- *Fire Dampers to be located to allow maintenance and resetting. Fire dampers shall have local indication to indicate the dampers position i.e. open/closed.*

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 12) Supply Diffusers
AREA:	Commercial Kitchen
REV:	A : 14 June 2011

SPECIFICATION:

The Contractor shall be responsible for the design, supply, installation and commissioning of all grilles, diffusers and registers.

The Mechanical Contractor shall provide a sample of each grille/diffuser proposed for approval by the Consultant and Designer prior to installation.

The size of the diffuser shall be suitable for the airflow to be delivered through it, the manufacturers recommendations shall be taken into account when selecting and positioning diffusers.

The diffusers shall be suitable for supply air, they shall be louvered face ceiling mounted with removable core. The removable core may be spring retained or mechanically fixed.

The core shall have a retaining wire to prevent the core falling should it become free.

It is anticipated that all diffusers within the kitchen shall be four way diffusers.

The rear face of the diffuser shall have blanks installed as necessary to prevent airflow draughts i.e. diffusers adjacent heated gantry's shall not blow air directly at the gantry.

All grilles shall be finished to a BS 9010 White.

Grilles shall be smooth finish on the front face. All fixings shall be on the rear of the diffuser.

The Mechanical Contractor shall allow for the protection of paint finishes to all grilles, diffusers, etc., for the duration of the works.

Diffusers shall contain internal balancing dampers, only as necessary, where volume control dampers can be incorporated into the ductwork, this shall be the preferred location for the balancing devices.

The Contractor shall be responsible for balancing and commissioning the supply system in line with the extract system and which shall be set and adjusted by the Mechanical Contractor.

CONSIDERATIONS:

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TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 13) Cookline Canopy
AREA:	Commercial Kitchen
REV:	B : 11 August 2013

SPECIFICATION:

The contractor shall install the canopy at a minimum height of 2000mm from the finished floor level. The underside of the canopy shall be installed at a maximum height of 2100mm from finished floor level.

The type of canopy shall suit the kitchen application and the primary filters it contains.

Any grease captured by the canopy shall not be allowed to re-enter the kitchen.

It is the Contractor's responsibility to liaise with the architect to ensure that there is sufficient headroom for the canopy to be installed. The Contractor shall liaise with the catering contractor and confirm the correct height of the canopy. A fire hazard or reduced equipment performance may occur due to items being located too close to the fascia of the canopy.

The canopy shall be manufactured from Grade 304 stainless steel.

When the supply air method to the kitchen is to be by outboard air grilles, which are located along the front outward face of the canopy, these shall have a stainless steel finish to match the canopy material. For cost effectiveness the grilles may be manufactured from epoxy coated steel with a stainless steel finish. Any visible steel behind the outboard air grille shall be painted out. No other materials are acceptable.

Where supply air is delivered from the canopy to the kitchen, spot grilles are acceptable along the outer edge of the canopy. The grilles are to be adjustable by the operators with on/off facility. They may be plastic inserted into the stainless steel, where plastic they must be replaceable.

Canopies shall be constructed in accordance with the criteria set out within HVCA document DW/172 Sections 10 and 11. No other methods of construction will be accepted.

The canopy shall be complete with grease collection drawer/s. The number and spacing of the collection drawer/s shall suit the proposed primary filters. The size of the grease drawer/s should be sufficient to suit the type of cooking and be capable of containing grease from 24 hour continuous use. The grease drawer/s must be isolated from the air stream otherwise re-entrainment can occur.

The canopy shall be complete with integral lighting, the switching of which shall be incorporated into the main kitchen lighting circuits. The lighting shall provide 500lux at the working surface.

Each canopy shall be complete with "Rating Plate" on the inside left end of the canopy. The plate shall detail the name, address and telephone number of the supplier, date of installation and serial number, design extract and supply air flow rates, design pressure drop across the canopy at the extract and supply spigots.

The stainless steel splash-back shall be formed using the same grade and finish material as the catering canopy and around any column or partition wall which forms part of the cook line area. The splash-back shall be mounted onto a rigid backing board. All fixings shall be concealed.

Where a chargrill is to be installed the stainless steel sheet is to have an insulated backing.

CONSIDERATIONS:

- All electrical works shall comply with BS 7671. The contractor is responsible for sizing of all cabling.
- All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.
- All equipment shall be suitable for its location and application.
- The catering equipment to be located below the canopy.
- The canopy shall contain primary filters at a height suitable for daily cleaning procedures.
- *Fire Protection of building structure.*

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 14) Extract Canopy Primary Filter Baffle Type
AREA:	Commercial Kitchen
REV:	E : 14 February 2017

SPECIFICATION:

Shall be baffle filters, these filters comprise a number of interlocked vanes which when assembled, form a two-pass grease removal device. Grease laden air passes through the filter and by a series of forced changes in direction and velocity, the grease becomes separated from the air stream and is deposited on the vertical vanes. The deposited grease is then drained off through weep holes spaced at intervals *at the base of the filter* and into a collection drawer/s.

Canopy filtration shall be manufactured from 304 stainless steel, fixed blade baffle filters. Filters shall be complete with handles to enable removal from and reinstallation to the canopy. Weep holes shall be manufactured in to both top and bottom edges.

The primary filters shall be sized to suit the extract air flow rate required by the canopy. To achieve optimum efficiency care should taken to ensure that extract velocities through baffle filter vanes shall be between 3.0m/s – 6.0m/s. The filters should be installed at an angle no less than 45° from the horizontal.

The filters shall be of welded construction, with a material thickness such that the vanes do not flex in use. Filter vanes shall not flex with hand pressure. Filters shall be constructed to withstand the daily use and cleaning associated with the kitchen.

There shall be no visible path through any part of the filter.

CONSIDERATIONS:

With the baffle filter in place the canopy shall not let captured grease re-enter the kitchen.

All primary filters shall be a “snug” air tight frame fit within the canopy. Filters shall be installed within the canopy such that all extracted air must pass through the filter, no loose filters or air gaps around filters shall be acceptable.

A site shall have a single size of filter to allow interchange during the cleaning process.

Filters shall be positioned accessibly to allow staff to change and clean filters daily or as necessary to maintain a clean canopy.

When installed the baffles within the filter housing shall have vertical vanes.

Filters shall have drain holes, as a minimum, along one edge. The holes shall be at the bottom of the filter when it is installed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 14A) Extract Canopy Primary Filter Double Baffle Type
AREA:	Commercial Kitchen
REV:	D : 14 February 2017

SPECIFICATION:

Shall be baffle filters, these filters comprise a number of interlocked vanes which when assembled, form a four pass grease removal device. Grease laden air passes through the filter and by a series of forced changes in direction and velocity, the grease becomes separated from the air stream and is deposited on the vertical vanes. The deposited grease is then drained off through weep holes spaced at intervals at the base of the filter and into a collection drawer/s.

Canopy filtration shall be manufactured from 304 stainless steel, fixed blade baffle filters. Filters shall be complete with handles to enable removal from and reinstallation to the canopy. Weep holes shall be manufactured in to both top and bottom edges.

The primary filters shall be sized to suit the extract air flow rate required by the canopy. To achieve optimum efficiency care should be taken to ensure that extract velocities through baffle filter vanes shall be between 3.0m/s – 4.0m/s. The filters should be installed at an angle no less than 45° from the horizontal.

Double Baffle filters shall be a single piece unit that opens out. The baffle filter shall be hinged to enable cleaning between the filter faces.

The lifting handles shall also lock the two halves of the filter together/closed.

CONSIDERATIONS:

With the baffle filter in place the canopy shall not let captured grease re-enter the kitchen.

All primary filters shall be a “snug” air tight frame fit within the canopy. Filters shall be installed within the canopy such that all extracted air must pass through the filter, no loose filters or air gaps around filters shall be acceptable.

A site shall have a single size of filter to allow interchange during the cleaning process.

When installed the baffles within the filter housing shall have vertical vanes.

Filters shall have drain holes, as a minimum, along one edge. The holes shall be at the bottom of the filter when it is installed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 15) Extract Canopy Primary Filter Cartridge Type
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

Shall be cartridge filters, installed horizontally, cartridge filters comprise a high velocity slot opening on to a media which cause air to change direction multiple times. The cartridge filters are installed over the full length of the extract plenum and should be sloped to allow trapped grease to fall through to the front grease drawer. These filters are intended for heavy grease loads. Having a higher velocity enables lower air volumes to be used.

Canopy filtration shall be manufactured from 304 stainless steel body with 302 stainless steel media, cartridge filters. Filters shall be complete with front bucket to enable removal from and reinstallation to the canopy.

The primary filters shall be sized to suit the extract air flow rate required by the canopy. To achieve optimum efficiency care should be taken to ensure that extract velocities through cartridge filter shall be between 4.0m/s – 5.5m/s. The filters should be installed at an angle of 45° from the vertical.

The Contractor shall provide a spare set of primary canopy filters. The filters shall be boxed and labelled and presented with the handover package.

The cartridge filter shall be supplied and installed with an adapter plate that takes the place of a standard baffle filter.

Standard drawings relating to the filter, adapter plate and the retaining levers shall be utilised for guidance.

Veritech FC5010 Cartridge filters are used as standard.

CONSIDERATIONS:

All primary filters shall be a "snug" air tight frame fit within the canopy. Filters shall be installed within the canopy such that all extracted air must pass through the filter no loose filters or air gaps around filters shall be acceptable.

With the cartridge filter in place the canopy shall not let captured grease re-enter the kitchen.

A site shall have a single size of filter to allow interchange during the cleaning process.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 16) Extract Fan
AREA:	Commercial Kitchen
REV:	D : 14 February 2017

SPECIFICATION:

Extract fans shall be mixed flow or backward curve centrifugal with either direct or belt driven motors.

All extract fans must have robust, durable metal blades as plastic bladed fans will not be accepted. Motors should have a minimum IP55 rating and be designed to operate comfortably at between 40°C and 90°C at 95% humidity.

The fan duty shall be as a minimum the air flow rate dictated by the canopy design, with resistance to match the installed ancillaries. Where filters are to be located the fan shall have 300Pa spare capacity when the filters are clean to cope with dirty filters. The Contractor shall understand that, for client flexibility, the use of the kitchen may change and thus space within the extract ductwork suitable to retro-fit an odour abatement system in the future shall be allocated.

Retro-fitting future equipment should be such that existing equipment should not need to be relocated to accommodate this.

The extract fans shall be located as far from the kitchen as reasonably practical. Where possible fans shall be located internally. Fans shall be installed in a manner that future maintenance is feasible. No fan shall be installed externally unless they are readily accessible i.e. without the need for ladders or scaffold to be erected.

Wherever possible fan motors are to be located external to the air stream. Should the fan motor be located remotely to the ductwork the Contractor shall provide sufficient, labelled spare belts within his handover pack.

All motors shall be IE2 standard or better as regulations dictate.

All motors shall be speed controlled via Electronic Inverter.

The Contractor shall design and specify all fan ancillaries, including speed controllers, anti-vibration pads/mounts, etc.

It is the Contractor's responsibility to provide the main contractor with positions, sizes and quantities of all fans and duct access panel positions required.

Drain/catch pans shall be installed below all extract fans.

The kitchen extract fan shall be mounted on purpose made anti vibration resilient mountings to limit vibration transmission to the building structure and fabric.

CONSIDERATIONS:

The kitchen ventilation extract fans shall be suitable for the application.

The kitchen ventilation extract fans shall be suitable for the mounting location application.

The Acoustic restrictions of the site.

All electrical works shall comply with BS 7671.

Access & Maintenance.

This unit requires PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

The extract fan shall be wired/linked with the gas interlock to ensure the extract and supply fan are operating to enable gas flow.

The fan shall be wired with an identifiable means of local isolation.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP17) Extract Attenuators
AREA:	Commercial Kitchen
REV:	B : 10 August 2012

SPECIFICATION:

Attenuators shall only be installed where necessary. The sites planning constraints will dictate the level of attenuation required.

Contractor to contact the design team and project Acoustic Consultant for details of any restrictions.

Attenuators are to be cleanable, with an access panel installed at inlet and discharge, all media within the filter shall be provided with a Melinex lining to enable the inner surfaces to be cleaned of grease.

Attenuators are to be fully accessible with a removable side to enable the internal filter media sections to be removable.

The Contractor shall support each attenuator independently and in such a fashion that the adjacent ductwork and joints are not stressed.

CONSIDERATIONS:

- Access for maintenance and cleaning.
- Local Authority Planning Constraints.
- The fan sound power levels.
- Landlord site constraints.
- Acoustic Consultant reports.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 18) Extract Ductwork
AREA:	Commercial Kitchen
REV:	D : 14 February 2017

SPECIFICATION:

All ductwork shall be constructed as specified in HVCA DW/144 with a minimum thickness of 0.8mm. No other ventilation systems shall be connected to the catering extract system.

Ductwork shall be Square with radius bends. Ductwork shall be sized to achieve the velocities as detailed in DW/172.

Providing all the extract ductwork runs within the fire compartment area of the kitchen there should be no requirements to fire rate the ductwork. It is the Contractor's responsibility to check with the Architect for the project, the extent of the fire compartments and to install fire protection, in the form of fire rated duct or fire protected enclosure, as necessary.

In accordance with BS: 5588, Part 9, under no circumstances should fire dampers or Intumescent blocks be installed in the EXTRACT duct run as their installation creates further hazards.

Where the duct passes through cold areas or other non-catering areas, suitable insulation shall be installed to avoid condensation build-up or heat transfer between the duct, ceiling voids and adjacent areas.

To keep ductwork resistances to a minimum and to reduce areas for grease deposits, turning vanes, square bends, shall not be used. Ducts shall NOT be lined internally.

The extract duct discharge point shall be positioned so as not to transfer odours to any other ventilation system (including adjacent properties) or indeed the supply air system for the kitchen or restaurant. The distance between the catering extract discharge point and any other intake (including the kitchen supply air) shall be at least 3.0m apart.

The kitchen extract duct shall terminate in a vertical stack, the duct should discharge at least 1.0m above the building ridge level, as a minimum, it shall be 1.0m above any opening window. The extract discharge shall be 'open' and cannot terminate in mesh or 'china-man hat' style cowl. Acceptable discharge terminals and velocities are detailed within HVAC DW/172 Section 14, Fig. 15-17. Discharge Stacks shall terminate outside of any negative pressure zone and at least level with any parapet wall.

Drains at the base of vertical stacks on the discharge side of fans shall have drip trays installed below. Where drain locations need to be piped they shall be steel or copper with a 28mm (1") minimum diameter. Drains to be taken to drain pan/catch pan and not rainwater pipework.

Where an open discharge duct presents a Health & Safety Hazard, i.e. rotating fan blades are accessible a mesh protection is acceptable, Extending the duct to prevent the Health & Safety Hazard is the preferred option.

The number of joints within the ductwork system are to be minimised and are to be installed with seals that will not allow grease to leak from the ductwork of the lifetime of the building. All horizontal sections of ductwork must be laid at a minimum gradient of 1 in 80, back towards the canopy to prevent a build-up of grease.

CONSIDERATIONS:

DW/172

DW/144

TR/19 for access, noting MAB requirements BSKVP 21

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 19) Fire Rated Ductwork
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

Providing all the extract ductwork runs within the fire compartment area of the kitchen there should be no requirements to fire rate the ductwork. It is the Contractor's responsibility to check with the Architect for the project, the extent of the fire compartments and to install fire protection as necessary.

Should the extract ductwork run through into a different fire compartment within the building, fire rated ductwork (tested to the requirements of BS : 476 Part 24), should be installed.

Fire rated duct work shall be type B and constructed to provide an 1 hour insulation and 1 hour Stability.

Ductwork shall be sized to achieve the velocities as detailed in DW/172.

In accordance with BS: 5588, Part 9, under no circumstances should fire dampers or Intumescent blocks be installed in the EXTRACT duct run as their installation creates further hazards.

The number of joints within the ductwork system are to be minimised and are to be complete with fire rated seals that will not allow grease to leak from the ductwork of the lifetime of the building. All horizontal sections of ductwork must be laid at a minimum gradient of 1 in 80, back towards the canopy to prevent a build up of grease.

Contractor to issue ductwork fire rated certificate, to confirm the insulation and integrity standard, at completion of works.

CONSIDERATIONS:

DW/144
DW/172
TR/19 noting MAB requirements BSKVP21

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 20) Supply & Extract Ventilation Gas Interlock
AREA:	Commercial Kitchen
REV:	A : 14 June 2011

SPECIFICATION:

The Contractor shall install the complete catering kitchen ventilation interlock system. The system shall comply wholly with the details specified within the British Standard.

A kitchen ventilation interlock system must be installed.

The interlock panel shall be installed adjacent to the supply and extract speed controllers within the kitchen.

The gas interlock should be used where gas cooking appliances beneath the catering kitchen canopy which do not incorporate a flame-failure device have been fitted.

The panel shall include an emergency knock off button.

There shall be an emergency knock off button at the kitchen exits, where the location is likely to be subject to nuisance activation the knock off button shall be shrouded.

The gas interlock shall prevent gas to flow to the cookline should airflow be inadequate for the safe operation of appliances and safety of personnel.

In duct air flow switches within kitchen extract duct shall not be used.

Air flow may be measured by the available range of indirect methods such as pressure differential switches and/or current monitoring.

Motor current monitoring shall NOT be used for belt driven fans.

A gas interlock system shall be set-up and commissioned in accordance with the manufacturers instructions with due consideration for both clean and dirty filters.

CONSIDERATIONS:

Health and Safety Catering Information Sheet 23

Gas Safety (Installation and Use) Regulations 1998.

BS 6173:2009 Specification for installation and maintenance of gas fired catering appliances for use in all types of catering establishments.

All electrical works shall comply with BS 7671.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 21) Ductwork Access
AREA:	Commercial Kitchen
REV:	B : 12 August 2013

SPECIFICATION:

To facilitate cleaning and inspection, access panels shall be installed at 1.5m centres maximum in locations as detailed within DW/172, Section 25 and TR/19. Over and above this, the Contractor must ensure that the Cleaning Contractor will be able to clean all areas of the kitchen extract system without the need for additional access hatches, or for additional access panels to be formed in builder's work sections, or for the need for non standard access equipment. The Contractor shall determine the size of access hatches required to effectively access and clean the ductwork, however the hatches shall be as large as possible and have minimum dimensions of 600mm Wide x 600mm High.

Where spiral ductwork is installed access doors shall be as large as possible to maintain access. i.e. 500x400 or 650x450, noted that the duct diameter will limit the height of the access door.

Ductwork shall be finished, all cut edges to be deburred.

The access panels should be located at least 40mm above the underside of the duct for horizontal runs and an access panel at every floor level should be provided on vertical rises. There shall be further access hatches at all changes in direction, the impellor side of the fan and in positions that will allow the servicing of any attenuators.

Access panels shall not be situated on the base/bottom of any kitchen extract ductwork.

Access hatches shall not be situated on the top face of ductwork when the ductwork is installed external to the building.

Where necessary the hatches should maintain the fire rating of the duct and have minimal projections into the air stream.

It is the Contractor's responsibility to provide and specify the details for the main contractor with quantities, sizes and positions of any ceiling and riser access hatches.

The Contractor shall liaise with the area duct cleaning contractor to ensure the correct cleaning access installed.

CONSIDERATIONS:

- DW/172
- DW/144
- TR/19

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 22) Ductwork Sealant
AREA:	Commercial Kitchen
REV:	A : 14 June 2011

SPECIFICATION:

Kitchen extract ductwork shall be air tight to HVCA DW144 Class C, in addition it shall be sealed to prevent captured/entrained grease from being able to escape the duct.

All sealants/gaskets shall be suitable for the application i.e. the working temperature shall withstand 60°C constant temperature. Temperature and grease shall not dissolve or reduce or make sealants elastic in any way.

The Contractor shall ensure that the manufacturer's recommendations for cleanliness and any cure time during installation are adhered to.

All sealants shall be fire resistant and self extinguishing.

The Contractor shall ensure a complete unbroken gasket of sealant is applied between the ductwork flanges. Flanges shall be joined with an even pressure applied along the length of each flange.

CONSIDERATIONS:

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 22A) Flexible Ductwork Connections (Anti-Vibration)
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

Flexible Connections within Kitchen Extract Ductwork shall not be installed as standard and only be installed where solid fixed ductwork is impractical or problematic. i.e. the fan is not internally anti-vibration mounted and vibration to the structure is evident.

Connections to be airtight whether the duct joints are vertical or horizontal. Where the flexible material creating the duct connections has an overlap this shall also be airtight. Where a flexible material requires a site made overlapped joint the joint shall be sealed, stapled and be air tight.

Flexible Connections shall ideally be preassembled with galvanised flange joints at both ends (Verromez or Doby Flange) to enable the final flanges to be fitted with sealing gaskets.

Flexible material shall not form more than 150mm in duct length for any one flexible connection.

The whole assembly of each 'connection' shall be of very good mechanical resistance and fire rated to 'Hardly Flammable' Classified (BS:476, Part 7, Class 1) suitable for use in temperatures -20°C to 100°C as a minimum.

Fabric to be Neoprene or glass fibre backing (Doby Verrolec DS110).

Where Flexible connections are installed the ductwork either side of the connection shall be separately supported such that the joint does not become defeated with the two adjacent metal flanges being squeezed together.

Access Doors shall not be installed in Flexible connections.

CONSIDERATIONS:

DW/172
DW/144

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 23) Fixed Speed Controls
AREA:	Commercial Kitchen
REV:	F : 25 June 2018

SPECIFICATION:

The Contractor shall be responsible for the design, selection, supply, installation and commissioning of all fan and ventilation controls and sensors.

The kitchen controls being either separate or within a panel shall be as a minimum, Supply Fan control, Extract Fan control and Gas Interlock.

The use of Variable Speed Drives VSD is the preferred control method. It is noted that the distance between the kitchen and fans may be greater than 5m and where necessary the drives shall be mounted in weather proof enclosures externally adjacent to the fans.

The preferred VSD shall be the VACON 0100 Series.

The supply and extract fans shall not be speed adjustable by the operators. The only fan control required shall be to provide on/off functions.

The VSD Controllers for the supply and extract fans shall be mounted away from open use and shall not be adjustable by the operators i.e. behind locked panel doors, each shall have a label to identify its use and to confirm the settings are not to be altered, as well as to confirm the commissioned settings.

The ON/OFF function may be created by installing a MK metal cased, 2 gang, switch in the kitchen. Two gang to enable an ON/OFF for each fan. Wire from each VACON drive to the switch in screened controls cable, one cable per drive, being suitable for 24V control.

Wire VACON terminals 6 and 8 to the switch, 6 is 24V from VSD with voltage received to 8 to trigger the VSD to ramp to speed setting.

The Drives provided shall be marked to indicate the "commissioned" air flow rates, i.e. the minimum settings required to achieve the design supply & extract air flow rates. The supply shall also be marked with the maximum setting i.e. the maximum the fan shall run without unbalancing the extract volume flow rate.

Where fans and controllers differ in manufacturer the drive/controller shall be of suitable size and duty to match the installed fan motor.

It is the Contractor's responsibility to ensure that when the fan operates at its lowest speed, the filters can still operate efficiently to extract the grease. Failure to achieve this will allow grease to build-up on the filters.

Supply and extract fans shall be interlocked with the gas supply to the kitchen after the canopy ventilation rates have been set up.

The Contractor shall be aware the use of Transformer Controllers in combination of IE2 motors may be problematic and shall install controllers suitable for the installed fan in accordance with manufacturer's instructions.

CONSIDERATIONS:

Health and Safety Catering Information Sheet 23

Gas Safety (Installation and Use) Regulations 1998.

BS 6173:2009 Specification for installation and maintenance of gas fired catering appliances for use in all types of catering establishments. Gas Interlock BSKVP 20

All electrical works shall comply with BS 7671.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 24) Thermal Insulation
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

Insulation shall be installed to all supply ducts that carry tempered air.

Insulation shall be installed to all supply ducts that carry untempered air when the duct is routed internal to the building envelope.

Insulation shall be applied to extract ducts that provide a hazard due to condensation forming either on the inside or outside of the duct. i.e. where a kitchen extract duct passes through a cold room it shall be insulated.

Insulation applied to kitchen supply or extract ductwork shall be either closed cell nitrile rubber or phenolic foam sheets.

Phenolic Foam sheet applied to extract ductwork shall be a minimum of 40mm total thickness.

Closed cell nitrile rubber sheet applied to extract ductwork shall be a minimum of 65mm total thickness.

Insulation shall be installed adjacent to the duct wall and held in place/secured by adhesive, adhesive stick pins and where necessary wire mesh.

Phenolic insulation shall be rigid sheets with an aluminium foil face. All joints shall be made good with a vapour proof seal.

Closed cell nitrile rubber insulation shall have all joints vapour sealed by adhesive.

All insulation shall be class "O" fire rating.

No duct joints/flanges shall be insulated until the seal is tight and had time to cure.

Where insulation is applied externally an additional layer of Venture Clad shall be applied to the outer surface to provide a weather protective and UV shield to the insulation. All joints shall be lapped to provide a weather proof installation. Venture Clad shall only be applied when insulation is complete. The colour shall be Black by default. Noted other colours white, natural aluminium, stucco embossed black or white are available should site or other restrictions apply.

CONSIDERATIONS:

Acoustic Requirements of planning that may require insulation to be combined with or have sound deadening material/layers included.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 25) Fine Filtration
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

A basic filtration unit for use with low odour problems may be supplied containing three stages of progressively more efficient filters. Disposable pleated filters precede a 95% efficient absolute filter. This system will not deal with the gaseous phase but is intended to reduce the visible particulate, i.e. smoke, to a maximum level of 0.3 microns and all components should be monitored closely and replaced when required. The system should be installed after high efficiency canopy cartridge filtration.

1st Stage Filters

Panel Filters shall be G4 grade minimum.

Bag Filters shall be F8 grade minimum.

2nd Stage Filters

HEPA Filters shall be E11 grade minimum.

All panel and fine filters shall have the date they are installed written on the "visible" side of each filter case to aid future maintenance.

All filters shall be installed in a suitable housing. The housing shall be constructed such that the installed filters are air tight and all air shall only pass through the filter media.

The filter housing shall have a traffolyte label attached/glued to the outside of the housing providing the details of the grades, type, size and number of filters the housing contains.

All filter housings shall be installed with pressure tappings installed across each filters section, i.e. A housing containing a panel filter, bag/HEPA filter and carbon filters shall have 4no tappings along its length. 1no. before the panel (this could be located in the ductwork prior to the filter housing). 1no. between the HEPA and the carbon filter, 1no. after the carbon filter.

Each tapping shall be mounted on the top face of the relevant duct/housing to minimise the chance of blockage each shall be installed with a cap to prevent air leakage under normal operation.

The Contractor shall measure and record the pressure drop of the newly installed filter to assist in future maintenance.

CONSIDERATIONS:

The Fan selection shall take into account the pressure drop with all filters in a dirty state.

Filters require PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

EN 779:2012

EN 1882

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 26) Carbon Filtration
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

Carbon Filters are NOT to be installed as standard, the preference being to install UV Ion ozone injection units to treat the gaseous stage of odour abatement.

Activated carbon provides an effective medium for eliminating odour but can be rendered none functional through the impregnation of contaminants within its porous granule composition. Grease is the worst such contaminant; it is therefore essential to protect the carbon cells with multi-stage pre-filters upstream of the system. The maximum operating efficiency of carbon filters is very much dependent upon them working within defined conditions – an air temperature not exceeding 40°C and a maximum relative humidity of 60%. To maximise best use of carbon cells a strict maintenance regime for changing filters shall be adopted.

Carbon filters must be installed after 1st stage fine filtration or an Electrostatic Precipitator.

All carbon filters shall have the date they are installed written on the “visible” side of each filter case to aid future maintenance.

All filters shall be installed in a suitable housing. The housing shall be constructed such that the installed filters are air tight and all air shall pass through the filter media.

The filter housing shall have a traffolyte label attached/glued to the outside of the housing providing the details of the grades, type, size and number of filters the housing contains.

All filter housing shall be installed with pressure tappings installed across each filters section.

Each tapping shall be mounted on the top face of the relevant duct/housing to minimise the chance of blockage each shall be installed with a cap to prevent air leakage under normal operation.

The Contractor shall measure and record the pressure drop of the newly installed filter to assist in future maintenance. The Contractor involved in a filter change shall record the pressure drop across each section of filters prior to a change.

Where carbon filters are to be installed. The Contractor shall ascertain the weight of the suitably sized unit and clarify whether the intended location for the filter is suitable for the weight. Where any doubt arises the advice of a structural engineer shall be sought.

CONSIDERATIONS:

Filter Housing Access to the side of the housing shall be a minimum of the width of the housing.

The weight of carbon filters.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 27) Electrostatic Precipitation Filters (ESP)
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

The Electrostatic Precipitator like the fine filtration disposable filters, is only intended to remove visible grease/smoke particles from the exhaust airstream rather than the gaseous phase.

The manufacturers provided mesh filter should be fitted both upstream and downstream of the electrostatic filter to provide some protection from larger contaminant that may have passed through the grease filters. It should be noted that electrostatic filters become ineffective at temperatures over 60°C and are not suitable for relative humidity levels above 75%.

The size of the Electrostatic Precipitator Unit will be determined by the air flow through the unit. The contractor shall size the unit in line with the manufacturers recommendations.

The filter housing shall have a traffolyte label attached/glued to the outside of the housing providing the details of the units.

An electrostatic precipitator housing shall be installed with pressure tappings installed across the section.

Each tapping shall be mounted on the top face of the connecting duct to minimise the chance of blockage each shall be installed with a cap to prevent air leakage under normal operation.

The Contractor shall measure and record the pressure drop of the newly installed filter to assist in future maintenance.

The Contractor shall ascertain the weight of the suitably sized unit and clarify whether the intended location for the filter is suitable for the weight. Where any doubt arises the advice of a structural engineer shall be sought.

The unit shall be installed level.

The unit shall be installed and supplied with all necessary drain/catch trays. 22mm minimum drain with full bore lever operated valve. The discharge to the drain is to be located to allow a suitable size collector/bucket to located below the drain.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

The contractor is responsible for sizing of all cabling.

All equipment shall be suitable for its location and application.

PPM will be required to the unit and suitable access for removal of dirty collector plates and installing clean collector plates along with gaining access to clean the internal of the unit.

CONSIDERATIONS:

The weight of the unit.

Cleaning requirements.

All electrical works shall comply with BS 7671.

This unit requires PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 28) UVC Ultra Violet Ozonolysis (In line)
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

Special ultra violet lights can be installed, either within the filter housing, ventilated ceiling plenum or as a remote unit. The units generate trace quantities of ozone. In the presence of ultra violet light, the ozone reacts with the organic compounds in the fat, odour by photolysis and ozonolysis to leave an end product of primarily only carbon dioxide and water.

The size of the Ultra Violet Unit will be determined by the air flow through the unit. The contractor shall size the unit in line with the manufacturer's recommendations.

The ductwork shall be sized to ensure a length after the UV unit of a minimum of 2 seconds within duct.

Where the dwell time is to be less than 2 seconds or residual ozone due to a low level outlet there shall be carbon filters or a catalyst installed to reduce the residual ozone before it leaves the duct system.

The Contractor shall ascertain the weight of the suitably sized unit and clarify whether the intended location for the filter is suitable for the weight. Where any doubt arises the advice of a structural engineer shall be sought.

The Kitchen Extract ventilation system shall terminate with a high velocity vertical discharge.

An Ultra Violet unit housing shall be installed with pressure tapplings installed across the unit.

Each tapping shall be mounted on the top face of the relevant duct to minimise the chance of blockage each shall be installed with a cap to prevent air leakage under normal operation.

There shall be an interlock on the access doors to the UV unit to ensure that electricity is cut if the access is opened, the tubes shall not operate with the access doors open.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

The Contractor shall measure and record the pressure drop of the newly installed filter to assist in future maintenance. The Contractor involved in a filter change shall record the pressure drop across each section of filters prior to a change.

The unit shall be installed and commissioned in accordance with the manufacturers instructions.

CONSIDERATIONS:

DW/172.

Residual Ozone.

All electrical works shall comply with BS 7671.

Installed as part an odour abatement policy.

This unit requires PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 28A) Ozone /Ion (Injection)
AREA:	Commercial Kitchen
REV:	C : 14 February 2017

SPECIFICATION:

Remote units are mounted external to the kitchen extract ductwork and ducted to the side wall of the main duct. The units generate trace quantities of ozone. In the presence of ultra violet light, the ozone reacts with the organic compounds in the fat, odour by photolysis and ozonolysis to leave an end product of primarily only carbon dioxide and water.

The size of the Ultra Violet Unit will be determined by the air flow through the unit. The contractor shall size the unit in line with the manufacturer's recommendations.

The ductwork shall be sized to ensure a length after the UV unit of a minimum of 2 seconds within duct.

Where the dwell time is to be less than 2 seconds or residual ozone due to a low level outlet there shall be carbon filters or a catalyst installed to reduce the residual ozone before it leaves the duct system.

The Contractor shall ascertain the weight of the suitably sized unit and clarify whether the intended location for the filter is suitable for the weight. Where any doubt arises the advice of a structural engineer shall be sought.

The Kitchen Extract ventilation system shall terminate with a high velocity vertical discharge.

There shall be an interlock on the access doors to the UV unit to ensure that electricity is cut if the access is opened, the tubes shall not operate with the access doors open.

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

The unit shall be installed and commissioned in accordance with the manufacturers instructions.

Where installed in a location that obscures the inbuilt operation and fault indication, the contractor shall install a remote indicator panel for operating staff to be aware of the units operating condition.

CONSIDERATIONS:

DW/172.

Residual Ozone.

All electrical works shall comply with BS 7671.

Installed as part an odour abatement policy.

This unit requires PPM to be carried out, install lighting where necessary to allow maintenance to be completed.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 29) Odour Neutralising Liquid spray
AREA:	Commercial Kitchen
REV:	B : 12 August 2013

SPECIFICATION:

Providing fine filtration are installed, odour neutralising liquid spray systems can be installed with the spray injected upstream of the extract fan. The cooking odours are neutralised by starving the odour molecules of oxygen.

The spray Unit shall be mounted in an accessible location that allows the internal reservoir to be inspected and filled on a regular basis.

The unit shall be installed internally where possible. Where the unit is mounted externally it shall be enclosed in a weather proof enclosure.

The unit shall be protected against freezing.

The Contractor shall provide the unit with a full container of Neutralising Agent and *at least* 5 litres of spare for future use.

Details of where Neutralising Agent can be obtained from and contact details shall be attached to the front of the unit.

The unit shall be wired from a separate electrical circuit. *The circuit shall be time controlled/interlinked with the kitchen extract fan to shutdown when the fan is not running.*

The contractor is responsible for sizing of all cabling.

All items of plant and equipment shall have local isolators. Each isolator shall be labelled to identify the item of equipment they control.

All equipment shall be suitable for its location and application.

The unit shall be set up and commissioned in accordance with the manufacturer's instructions.

The unit shall have a door with a suitable manual lock and be safe to open by on site operatives, without hazard to health, to allow access to the internal reservoir which is to be topped up.

CONSIDERATIONS:

Units require regular access.

All electrical works shall comply with BS 7671.

The site staff/operators require instruction on how to visually check and fill the fluid to top up the unit reservoir.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	(BSKVP 30) Fire Suppression Policy Statement
AREA:	Commercial Kitchen
REV:	B : 14 February 2017

SPECIFICATION:

Should a fire suppression system be installed, the Contractor shall install an 'Amerex' or 'Ansul' system only. No other systems or manufacturers shall be used without prior agreement from the Design Coordinator. Above all other regulations, the Local Fire Office dictates the extent of the fire suppression system.

Should it be specifically requested that a fire suppression system is to be installed the system should be designed and installed to HVAC DW/172 Section 20. The system should operate both automatically (via fusible links located per manufacturer's installation guide.) and manually via manual pull stations located next to the fire escapes in the kitchen. No manual pull stations shall be mounted on the canopy itself.

The position of the extinguishing agent and equipment should be sited so as not to affect the cookline processes and to allow the safe and unobstructed removal of the canopy filters.

Any electrical or gas suppliers to the protected area under the canopy shall automatically isolate in the event of the fire suppression system being activated.

At handover the installing contractor shall provide a walk through of the system to the Branch Manager to locate the system components.

The installing Contractor shall provide a Certificate of Installation and Commissioning.

The certificate shall provide:

System and Model Number, System Size/Serial & Registration Number.

CONSIDERATIONS:

The Planning Conditions and restrictions.

The System shall be designed in accordance with DW/172.

Insurance Requirements.

Landlord Requirements.

The local Fire Officer Requirements.

Requirement to have the system inspected by specialist contractor at 6 monthly intervals.

TITLE:	Building Standards Kitchen Ventilation Policy
ITEM:	Glossary
AREA:	Commercial Kitchen
REV:	D : 25 June 2018

BS 5839 Pt 1	The British Standard guidance document provided to assist in the design, installation and maintenance of commercial fire alarm and detection systems
BS 5839 Pt 6	The British Standard guidance document provided to assist in the design, installation and maintenance of smoke and heat alarms for domestic premises and sometimes used in commercial premises following consultation with the Company Fire Consultants
BS 5266 Pt 1	The British Standard document providing guidance on the factors that need to be considered in the design of, and the installation and wiring of, the electrical emergency lighting systems
DW/172	The <i>Building & Engineering Services Association</i> (Heating and Ventilating Contractors' Association) document provided to assist in the design, installation and maintenance of Kitchen Ventilation Systems 2017 Edition
TR/19	The <i>Building & Engineering Services Association</i> (Heating and Ventilating Contractors' Association) document provided to assist with guidance to good practice of Internal Cleanliness of Ventilation Systems.
HSE CAIS 10	The Health & Safety Executive Catering Information Sheet No. 10 (Rev.2) Ventilation of Kitchens for Catering Establishments.
HSE CAIS 11	The Health & Safety Executive Information Sheet No.11 detailing the main Health & Safety Law applicable to catering. No longer listed on HSE website.
CIBSE Guide B2 Section 36	The Chartered Institute of Building Services Engineers' Guide, covering kitchen design.
DW144	The <i>Building & Engineering Services Association</i> (Heating and Ventilating Contractors' Association) document Specification for Ductwork.
Fire Separation	Vertical or horizontal structure designed to resist the passage of fire and/or smoke for a set period. The standard for most areas in commercial premises is 30 minutes and occasionally 60 minutes
Gas Isolation Switch	A means of isolating the gas supply to cooking facilities generally found in retail kitchens. The device may be manual or electronic and must be in a position where it can be easily used without putting the operator at risk from a fire in a cooking appliance. Where possible the device should be sited adjacent to the fire alarm call point and electrical isolating switches
Cookline Dead end	A dead end created by the furniture and fittings in the retail kitchen where there is a danger a chef may be trapped by a cooking device on fire at the open end

Glossary

Silencer	See also Attenuator
Attenuator	Used to describe factory made sections of ductwork incorporating large volumes of sound absorbent material, better description than silencer which implies total sound reduction.
BS:6173	The British Standard Specification for the installation and maintenance of gas fired catering appliances for use in catering establishments.
BS:476 Part 24	The British Standard providing guidance for testing of fire resistant ductwork.
BS:5588 Part 9	The British Standard providing guidance regarding ductwork with particular reference to the fire protection for ventilation ductwork.
BS:5440-2	The British Standard for flueing and ventilation gas appliances of rated input not exceeding 70kW net specification for the installation and maintenance of ventilation provision for gas appliances.
LPCB	Loss Prevention Certification Board
LPS:1263	The Loss Prevention Standard detailing the requirements for the LPCB Approval and listing the fire performance of kitchen extract systems in particular grease filters.
HSE CAIS 23	The Health & Safety Executive Catering Information Sheet No. 23 (Rev.2) Detailing gas safety in catering and hospitality.
BS:1449, Part 2	The British Standard for stainless steel, now withdrawn, see BS EN 10051 and BS EN 10095
BS:7671	The Requirement for electrical installations IEE Wiring Regulations 17 th Edition
18 th Edition	The Current Wiring Regulations otherwise known as BS7671 from 1.1.2019
ESP	Electrostatic Precipitator, used in Odour Abatement to remove grease from kitchen extract.
UVC	Ultra Violet Light type C, Mid range wave length light used in grease removal.
TB140	Technical Bulletin 140, developed in conjunction with the Institution of Gas Engineers and Managers (IGEM). This document replaced by IGEM UP/19
Gas Safe Register	A register of Gas Engineers with relevant qualifications for work on gas fired catering appliances. Gas Registered Engineers are required to have COMCAT1 to work on Boiling Burners (Ranges, Ovens), COMCAT2 Water Boilers (Pressure or Expansion Type, Pressure Steamers) and COMCAT3 Fryers & Grills).
UP/19	Institution of Gas Engineers and Managers (IGEM). Design and application of interlock devices and associated systems used with gas appliance installations in commercial catering establishments. This document replaces TB140.
HSE CAIS 26	The Health & Safety Executive Information Sheet No.26 Preventing exposure to carbon monoxide from use of solid fuel appliances in commercial kitchens.