

Kingston Planning Department
Royal Borough of Kingston upon Thames
Kingston upon Thames
Surrey
KT1 1EU

Your Ref: **16/14486/FUL**
Our Ref: 491W.3.1.220216.IH
16 February 2022

Worcester Park Baptist Church, KT4 7EW

I write requesting the discharge of condition 6 of planning consent 16/14486/FUL.

Following the unsuccessful application (ref 21/01858/CLC) on 24 May 2021 to discharge condition 6, the Informative No 2 stated:

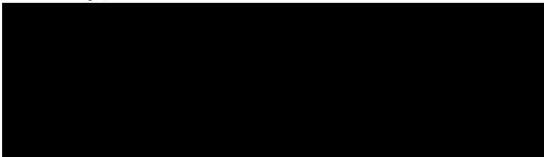
"The applicant is advised to resubmit with further details; including full details of the odour mitigation measures to be employed. This should be compliant with the EMAQ document titled, "Control of Odour and Noise from Commercial Kitchen Exhaust Systems", and should include the extraction hood, internal fan, flexible couplings, three-stage filtration [grease filters, pre-filters and activated carbon filters], height of the extract duct above eaves level and anti-vibration mountings."

We therefore have evaluated the stipulated EMAQ document, and have appended relevant sections below, and provided a detailed response to each section. We have also attached design drawings:

- BAC-9881C Rev B (showing the kitchen extract design)
- 6659.01 Rev D (showing the kitchen installation)
- Flakt Woods Limited Estoc Targe EC-Powerbox GF (detailing the extract fan located on the roof)

We trust that the information provided in this application is sufficient to enable the discharge of Condition 6. The proposed details included in this application are appropriate given the nature of the Church use of the kitchen which will not provide commercial catering, ensuring it remains ancillary to the D1 use of the site in accordance with the planning permission. If you or your Environmental Health Officer have any queries on the application, please do not hesitate to call or email.

Yours sincerely,



Ian Harvey

For and on behalf of Harvey Wright Architects
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Enc:

EMAQ: Control of Odour and Noise from Commercial Kitchen Exhaust Systems

Minimum Requirements for Canopy

Velocity requirements:

- Light loading – 0.25 m/s (applies to steaming ovens, boiling pans, bain maries and stock pot stoves)
- Medium loading – 0.35 m/s (applies to deep fat fryers, bratt pans solid and open top ranges and griddles)
- Heavy loading – 0.5 m/s (applies to chargrills, mesquite and specialist broiler units)

Below is an extract from drawing BAC-981C, showing the design calculations for the velocity of the proposed extract canopy, this provides a required design extract rate of 0.295m/s, with the specified canopy providing 0.369m/s.

HVCA	DW/172	SPECIFICATIONS FOR EXTRACTION CANOPY UNIT							
DWG REF	ITEM	SOURCE	PLAN SIZE		AREA M ²	COEFFICIENT	FLOW RATE M ³ /S	SURFACE TEMP °C	
			Length (mm)	Width (mm)					
16	Hot Cupboard	Electric	250	700	0.175	0.15	0.026		
14	Range/Oven (Open Top)	Electric	900	800	0.720	0.3	0.216		
12	Hot Cupboard	Electric	250	700	0.175	0.15	0.026		
Theoretical Extract volume required							0.295	m ³	
		Canopy Type	Overhead Wall Dual Open End				1.250		
SPECIFIC EXTRACT FLOW RATE REQUIRED							0.369	m ³ /s	
SPECIFIC SUPPLY FLOW RATE REQUIRED							0.314	m ³ /s	

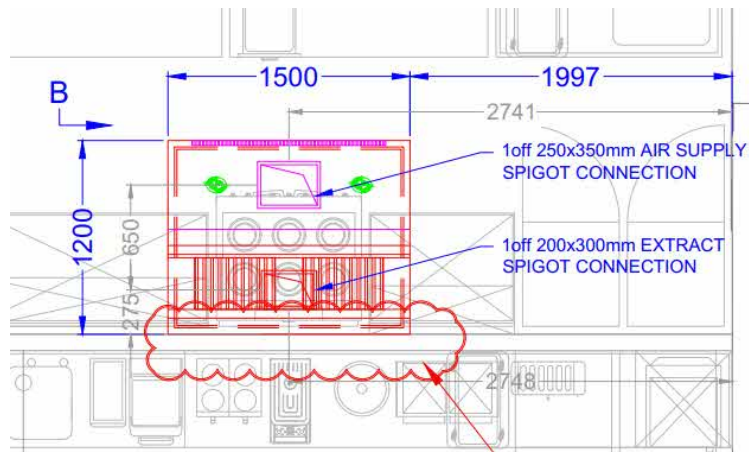
The Canopy extract rates complies with the requirements outlined in EMAQ guidelines.

Sizing:

- Ideally, the plan dimensions of the canopy shall always exceed the plan dimensions of the catering equipment by a minimum of 250 mm on each free side
- This should be increased to 600 mm in front of combination steaming ovens to cope with the steam or fumes released when the doors of the appliance are opened. Solid fuel appliances must have an overhang of 300 mm from the door open position

Materials:

- A material that would comply with the food hygiene requirement is stainless steel



Above is an extract from drawing BAC-981C, showing the size of the proposed extract canopy, with the Range cooker (in grey) below.



Range Cooker Features:

Size: 900mm(w) x 817mm(d) x 923mm(h)
6 x 1.85kW induction zones
6mm thk glass ceramic surface
Automatic pan detection
Fan assisted oven with thermostatic control
2 solid doors

The Canopy size exceeds the requirements of the sizing outlined in EMAQ guidelines.

CONSTRUCTION / MATERIAL SPECIFICATIONS

As standard all baffles are manufactured with Stainless Steel 430 polished finish, (Other finishes and materials are available). Maximum Operating temperature 400C or 750F



An example of baffle filters

The specified material complies with the requirements outlined in EMAQ guidelines.

Grease Separation:

- *The grease extracted by the separators shall be collected and removed so that it will not accumulate in either the canopy plenum or the ductwork system, or fall back onto the cooking surface*
- *The separator shall be constructed so that there are no sharp edges or projections and shall be easily removable for regular cleaning*
- *Primary filters that retain grease within the filtration matrix until cleaned, shall not be used (not to be confused with those designed with purpose made integral collection reservoirs)*

As detailed on drawing BAC-981C, the proposed extract canopy is to be supplied with “2off 500x500mm baffle style grease filters.”

How baffle filters work

Info obtained from <https://www.lotuscommercial.com.au/getting-to-know-your-baffle-filters/>

Baffle filters as with all filters work by separating grease from cooking vapours.

As grease-laden air is sucked through the filter, it is forced to quickly and repeatedly change direction.

The grease particles cannot move as fast as the air carrying them.

Therefore the air escapes into your ducting while the grease is captured in the filter. The grease ends up condensing on the metal blades before draining into the filter tray.

The chosen canopy has purpose made grease collection trays along the underside of the filter housing and fully insulated air input chamber to the front face of the canopy

The proposed grease filters to the extract canopy comply with the requirements outlined in EMAQ guidelines.

Minimum Requirements for Odour Control

Objectives

- for new premises or premises covered by planning conditions restricting the impact of odour the system shall be designed to prevent harm to the amenity.
- for existing premises not covered by planning conditions restricting the impact of odour, the system shall be designed to avoid statutory nuisance and shall comply with the principles of Best Practical Means.
- *The design of a control system should recognise that there are two phases of contamination in a kitchen exhaust; particulate (grease, smoke, hydrocarbons/VOC) and gaseous (odour). The particulate phase needs to be removed prior to dealing with the gaseous phase.*

To achieve these objectives the odour control system shall include an adequate level of:

1. *Particulate and odour control*; and
2. stack dispersion.

The overall performance of the odour abatement system will represent a balance of 1 and 2.

The Planning Approval [Ref: 16/14486/FUL] for the proposed development, outlined a condition No6 “for the effective control of fumes and odours from the premises” and therefore it is assumed that “**the system shall be designed to prevent harm to the amenity**”.

By amenity, we interpret this as being a local facility, or neighbouring property, and thus would suggest that the objective is predominately for the odours from the extraction to have an adverse effect on a neighbouring property, and we have reviewed the below sections using this principle.

Site Arrangement:

The original site contains a single property (Church & ancillary spaces) consisting of a number of interlinked buildings of varying heights, which are to be further linked with the proposed extension, creating a cohesive singular space.

The site is bounded on the eastern border by a railway line, on the Northern Border by a dual carriageway A2043, on the western border by a busy road The Avenue, with a residential development on the opposite side of the road.

The property to the Southern Boundary is a 3 storey residential development, with a minimal amount of windows facing the proposal site.



The location of the proposed extract fan is to be located on the original flat roof within the middle of the proposal site, with as identified, the nearest residential property being the neighbouring development. However the existing tall pitched roof of the church forms a definitive break from any noise, odours or visual between the residential property and the location of the extract fan.



Image of site prior to works progressing, showing approximate location of extract fan.

As is clear from the approved scheme (image below), the proposed location of the extract fan, will also not be visible or provide any noise transfer, or odours from The Avenue, or the residential properties on the Western side of the road.



The proposed isolated location of the extract fan from any neighbouring properties or from the roadway, will not “harm the amenity” and thus complies with the requirements outlined in EMAQ guidelines.

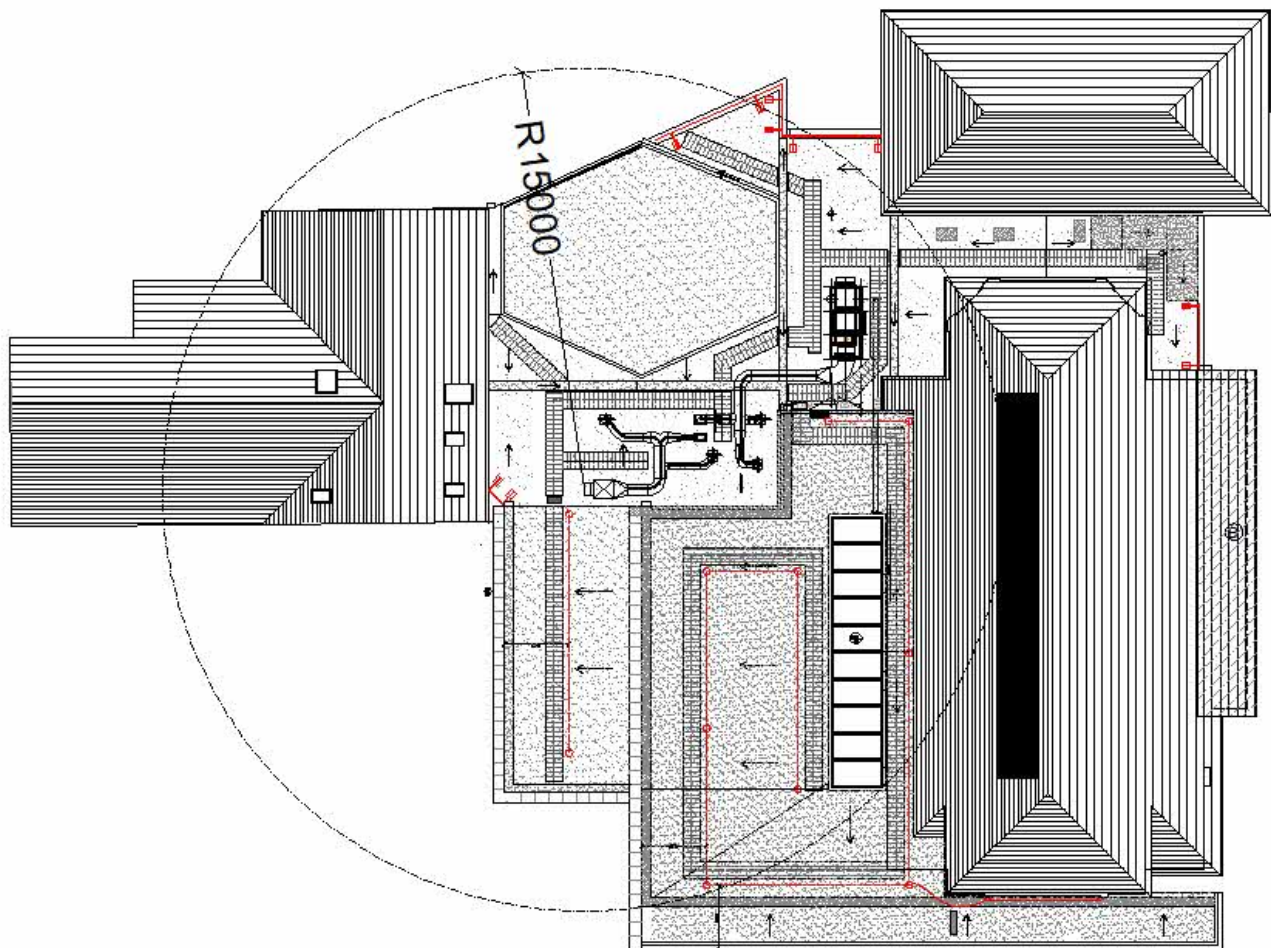
Discharge stack

The discharge stack shall:

1. Discharge the extracted air not less than 1 m above the roof ridge of any building within 15 m of the vent serving the commercial kitchen. *Additional odour control measures may still be required depending on the cooking type and frequency.*
2. If 1 cannot be complied with for planning reasons, then the extracted air shall be discharged not less than 1 m above the roof eaves or dormer window of the building housing the commercial kitchen. *A higher level of odour control measures than those required in part 1 may be required.*
3. If 1 or 2 cannot be complied with for planning reasons, then *higher level of odour control measures than those required in part 1 or 2 may be required.*

As identified in the section above, the site contains a single property and there are no other buildings or roofscapes within the 15m distance (see below) identified in No.1 of the EMAQ guidelines.

However as recommended, the extract fan is to be placed on the flat roof to allow the existing buildings to create a barrier to minimise any Noise impact, As such, the discharge stack will fall within No.2 of the EMAQ guidelines, with the extract fan discharge to be not less than 1m above the eaves of the building housing the commercial kitchen.



COOKING TYPE:

The EMAQ guideline related to discharge highlights that “*additional odour control measures may still be required depending on the cooking type & frequency*”.

In terms of the expected cooking type, the Management Plan as approved under Condition 10 of the Approved Planning Application, stipulated:

- *A Hub café at the centre of the building will be open to all and generally not bookable. It will provide refreshments together with a welcoming, relaxing, Christian, supportive, social environment that enables us to engage with the community and share God’s love. The Hub will always be available to those using the building as a space providing a more relaxing environment away from meeting rooms. During weekdays a modest charge for drinks and refreshments is proposed to cover the cost of supplies (milk, tea, coffee, food etc), lighting, heating, cleaning etc. A small hospitality budget will also be provided by WPBC to ensure that all in need are able to get refreshment, and to subsidise lunches for certain activities and events. A selection of cereal bars, fruit, paninis, pastries, sandwiches and filled baked potatoes will be available each weekday for a charge.*

Historically the church has provided to the local community a Lunch Club, and wish to continue this philosophy of lunches and light refreshments, and as detailed on drawing 6659.01.01 the new café kitchen has been equipped with:

- Induction oven range
- Soup kettle
- Panini grille
- Microwave
- Toaster
- Hot water boiler

This kitchen design allows for the provision of lunches, but does not have the capacity or equipment for Commercial catering (ie a Use Class E premises) with the associated grease-laden air; and will “...*remain as an ancillary use to the D1 use of the site and for no other purposes*”, as required by condition 7 of the approved planning consent.

The Services Consultant for the project has provided the following statement regarding the prevention of harm to the amenity:

“After assessment of the type of cooking to be undertaken in the kitchen, it is considered that a low level of odour control is sufficient to prevent harm to the amenity and this will be achieved by the provision of grease filters within the extract canopy and dispersion of the discharge above the eaves or dormer windows of the building housing the kitchen.”

The discharge requirements and cooking type are compliant with the requirements outlined in EMAQ guidelines.

Minimum Requirements for Noise Control

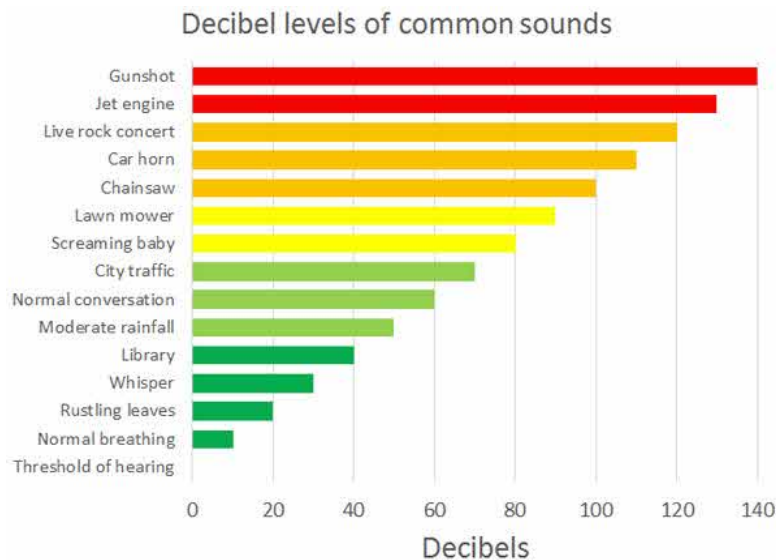
For new premises or premises covered by planning conditions restricting the impact of noise the system shall be designed to prevent an acoustic impact on the external environment and therefore harm to the amenity, as well as ensuring that noise exposure of kitchen staff does not constitute an occupational noise problem (see Control of Noise at Work Regulations 2005).

For existing premises not covered by planning conditions restricting the impact of noise, the system shall be designed to avoid statutory nuisance and shall comply with the principles of Best Practicable Means.

To achieve these objectives the noise control system shall include:

- control of noise at source to the greatest extent possible; and
- control of noise to the environment by taking acoustic considerations into account within duct, grille and termination design.

There is no stipulation in the Planning Conditions related to noise from Mechanical Plant, however as detailed on the data sheet "Flakt Woods Limited Estoc Targe EC-Powerbox GF" the overall acoustic data for the extract fan is 41dB at a distance of 3m, which when compared to other common sounds on the decibel scale places is slightly louder than a Library.



The Services Consultant for the project has provided the following statement regarding the fans and anti-vibration mounts:

"These units are not installed on AV mounts as the fans and motors are dynamically balanced, generate minimal vibration and are mounted resiliently within the unit casings, rendering external AV mounts unnecessary.

Similarly, the fans are low noise, the cases are acoustically lined and the noise emissions from the units do not require further reduction when considered against the surrounding acoustic environment."

The noise levels from the extract fan are compliant with the requirements outlined in EMAQ guidelines.

Some additional legislation / guidance that is relevant to the provision of kitchen extract:

The Workplace (Health, Safety and Welfare) Regulations 1992

"These Regulations require that employers provide effective and suitable ventilation in every enclosed workplace. This includes kitchens, which need ventilation to create a safe and comfortable working environment. Catering and cooking can produce significant amounts of fumes and vapours, as well as large amounts of heat. Mechanical extraction, via a canopy hood installed over the cooking appliances, can remove these fumes and vapour and discharge them to a safe location"

HSE Guidance: Ventilation in catering kitchens

"The canopy hood needs to be designed and operated to ensure effective removal of cooking fumes. It needs to be a suitable size and have enough extraction to minimise fume spillage into the kitchen"

Performance

"The extraction rate is best calculated from the information supplied with the appliances. It should also take account of air change rates required for kitchens."

As shown on drawing 9881 C, the ventilation rate of the kitchen extract canopy has been calculated relative to the appliances, and size of space.

Discharge

"High-level discharge of extracted air is often needed to prevent nuisance to neighbouring properties. Avoid rain caps and other devices that impede upward vertical velocity. Never use devices that direct the discharge downward as they encourage down draught and re-entry of fumes into the building. Fume discharge should also be away from wet cooling towers."

The ventilation system has been designed by a qualified Mechanical Engineer (JDP Building Services Engineering Consultants), using a Estoc Targe EC Powerbox (refer to data sheets)