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ODOUR RISK ASSESSMENT – KITCHEN EXTRACTION SYSTEM

HILLINGDON HOUSE, WREN AVENUE, UXBRIDGE UB10 0FD

FOR

COMPLIANCE DIRECT LIMITED



ISSUE STATUS: FINAL
DATE OF ISSUE: 03/11/2021
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1. EXECUTIVE SUMMARY

This report was commissioned by Abshar Banqueting & Events, to support a planning application for a change of use from A3 to Sui Generis of Hillingdon House, Wren Avenue, Uxbridge UB10 0FD as a venue for weddings and parties. Sound Licensing Ltd have been commissioned to carry out an assessment of the odour controls associated with the premises.

The extraction system has been assessed and recommendations have been made to ensure that the “best practicable means” to mitigate any odour nuisance from the extraction system have been employed and compliance with the requirements of the London Borough of Hillingdon Council and DEFRA’s “Control of Odour and Noise from Commercial Kitchen Exhaust Systems” have been achieved.

Consultants Experience

This report was prepared by Donal Rooney who qualified as an Environmental Health Officer in 1981. He has worked in the London area as an EHO since 1988 and exclusively in Pollution Control since 1991.

He worked for the Royal Borough of Greenwich from 1991 to 2016 where he investigated odour/smoke/dust complaints & also managed the Noise Team for 5 years. He oversaw the introduction of the licensing regime in Royal Greenwich when it came into force in 2006. He was a lead member of the Councils Licensing Safety Advisory Group.

He has a wide range of experience including providing advice to Planning and Licensing Committees and providing evidence at Planning and Licensing Appeals. He holds two Post Graduate Diplomas in Acoustics and Noise Control and currently works in the Pollution Control Section of the Corporation of the City of London and as a Senior Consultant for Sound Licensing.

2. INITIAL ASSESSMENT

Annex C: Risk Assessment for Odour - Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, 2005, DEFRA provides guidance on determining the level of odour control required in a commercial kitchen. The initial assessment is based on this approach.

The kitchen extraction system at Hillingdon House, Wren Avenue, Uxbridge UB10 0FD has a high-level discharge 1m above the roof eaves, the efflux velocity is assumed to be 10m/s. The discharge point of the flue is fitted with a high velocity cowl and the flue discharges vertically. The nearest residential receptors are immediately north the site at a distance of 21m from the discharge point of the flue. The restaurant is anticipated to serve a maximum of 150 meals a day so it would be considered to be a large sized kitchen.

The cooking equipment consists of:

- 1 X 9 Ring gas hob
- 2 X Ovens (Electric)
- 2 X Gas Wok Cookers

It is intended to serve traditional banqueting style food.

This would give a score of 21 as shown in Table 2.1 below:

Table 2.1

Dispersion	Proximity of receptors	Size of Kitchen	Cooking Type	Total Score
Moderate	Medium	Large	Low	
10	5	5	1	21

Based on the guidance shown below there is a high odour control requirement for the system.

Annex C: Risk Assessment for Odour - Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, 2005, DEFRA

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

Impact Risk	Odour Control Requirement	Significance Score*
<i>Low to Medium</i>	<i>Low level of odour control</i>	<i>Less than 20</i>
<i>High</i>	<i>High level of odour control</i>	<i>20 to 35</i>
<i>Very high</i>	<i>Very high level of odour control</i>	<i>more than 35</i>

** based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:*

Criteria	Score	Score	Details
<i>Dispersion</i>	<i>Very poor</i>	20	<i>Low level discharge, discharge into courtyard or restriction on stack.</i>
	<i>Poor</i>	15	<i>Not low level but below eaves, or discharge at below 10m/s</i>
	<i>Moderate</i>	10	<i>Discharging 1m above eaves at 10-15m/s</i>
	<i>Good</i>	5	<i>Discharging 1m above ridge at 15 m/s</i>
<i>Proximity of receptors</i>	<i>Close</i>	10	<i>Closest sensitive receptor less than 20m from kitchen discharge.</i>
	<i>Medium</i>	5	<i>Closest sensitive receptor between 20 and 100m from kitchen discharge.</i>
	<i>Far</i>	1	<i>Closest sensitive receptor more than 100m from kitchen discharge.</i>
<i>Size of kitchen</i>	<i>Large</i>	5	<i>More than 100 covers or large sized take away.</i>
	<i>Medium</i>	3	<i>Between 30 and 100 covers or medium sized take away.</i>
	<i>Small</i>	1	<i>Less than 30 covers or small take away</i>
<i>Cooking type (odour and grease loading)</i>	<i>Very high</i>	10	<i>Pub (high level of fried food), fried chicken, burgers or fish & chips.</i>
	<i>High</i>	7	<i>Kebab, Vietnamese, Thai or Indian.</i>
	<i>Medium</i>	4	<i>Cantonese, Japanese or Chinese.</i>
	<i>Low</i>	1	<i>Most pubs, Italian, French, Pizza or steakhouse.</i>

The guidance gives examples of what may constitute a high level of odour control:

High level odour control may include:

- 1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 - 0.4 second residence time).*
- 2. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.*

3. The Existing Kitchen Extraction System

The kitchen extraction system comprises of a stainless-steel canopy above the cooking units with removable and washable baffle filters to remove the bulk of the grease from the airstream. The air is then ducted via 350mm round ducting to riser which is ducted internally to roof level where the fan is located. Silencers are fitted on the atmosphere side and intake side of the fan.

The air is then ducted discharging vertically and terminating 1m above the roof eaves of the building.

The system as described above does not comply with the recommendations in EMAQ Control of Odour and Noise from Commercial Kitchen Exhaust Systems as set out in Section 2.

Recommendations

In order to comply with the requirements in the guidance it is recommended that the system is fitted with fine filters after the baffle filters followed by activated carbon filtration of sufficient size to allow for a dwell time of 0.2 to 0.4 seconds.

With the recommended changes to the system it would comply with the recommendations in EMAQ Control of Odour and Noise from Commercial Kitchen Exhaust Systems as set out in Section 2.

4. DISCUSSION

4.1 Principles of Nuisance Control

Cooking on a commercial basis causes the air to become laden with odours, grease, fumes and products of combustion. There needs to be sufficient air movement through the ventilation system to remove the contaminated air from the restaurant area. No single abatement technology is capable of removing all of the above mentioned contaminants. It is necessary to use a combination of treatments to ensure that the air discharged to atmosphere does not adversely affect surrounding properties.

4.2 Discussion

The system as installed, with recommended mitigation, would meet the requirements in the EMAQ+ guidance provided that the fan is set at a level so that it produces a face velocity at the canopy of 0.5 m/s and a discharge velocity at the duct terminus of 12m/s. The system would provide a very high level of odour control and would ensure that odour nuisance or loss of amenity to local residents would not occur.

The system as installed, with recommended mitigation, should provide a high level of odour control in accordance with the recommendations in the EMAQ Control of Odour and Noise from Commercial Kitchen Exhaust Systems.

Maintenance

Manufacturers' instructions with respect to system maintenance and cleaning must be adhered to. Good maintenance is a prerequisite for ensuring that a system complies with Best Practicable Means under statutory nuisance provision and will form a key element of any scheme designed to minimise harm to the amenity under planning regulation. Good maintenance is required by the food hygiene regulations and will also minimise the risk of fire.