Stylish Interiors & Architecture

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Noise and Odour Assessment Report

Applicant Mohammad Farooq
Location: 59 Coldharbour Lane UB3 3EE
Proposal: To install flue pipe at the rear of property and have it erected 1.m above roof level and min. 1m away from any residential windows

29th April 2024

Introduction

This noise and odour assessment has been prepared for 55 Coldharbour Lane UB3 3EE for the purposes of supporting a planning application. The assessment will examine receptors to noise and odour, the impact on these receptors and then define mitigation measures required.

Site Location Plans

The site is located on the western terrace of Coldharbour Lane UB3

Noise and Odour Receptor

The primary noise and odour receptors are the surrounding residential properties. The nearest is the residential units above the site

Noise and Odour Sources

Only one new additional noise-producing piece of plant is expected to be installed on site as part of the development, a commercial extract fan. This source is similar in character to the existing sources of noise on the site. No history of noise complaints is known. All nearby residential units appear to have double glazed windows.

The main odour source on site will be the preparation of food and the associated air extraction. This will be released via the extract fan and vent stack.

Please refer to the proposed plans and elevations for full details of the extract location. The extract fan a KBR 315DV Thermo Fan from System Air. The data sheet for this product is included in the planning application submission. The measured sound pressure level at 10m in a free field environment for this equipment is 28 dB(A)

Guideline Noise Values

There are a number of guidance documents that contain recommended guideline noise values in relation to residential noise receptors. These are discussed below.

British Standard 8233:2014 is principally intended to assist in the design of new dwellings; however, the Standard does state that it may be used in the assessment of noise from new sources being brought to existing dwellings.

The World Health Organization (WHO) advice provides guidance on acceptable internal limits.

The WHO guideline values are appropriate to what are termed “critical health effects”. This means that the limits are at the lowest noise level that would result in any psychological or physiological effect. They are, as defined by NPSE, set at the Lowest Observed Adverse Effect Level (LOAEL), but do not define the level above which effects are significant (the SOAEL). Compliance with the LOAEL should, therefore, be seen as a robust aim.

Document	Level	Guidance
World Health Organisation "Community Noise 2000"	L_{AeqT} = 35 dB	Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors)
	L_{AeqT} = 30 dB	Sleep disturbance, night-time (indoors)
	L_{Amax} = 60 dB	Sleep disturbance, windows open at night. (Noise peaks outside bedrooms, external level).
	L_{Amax} = 45 dB	Sleep disturbance at night (Noise peaks inside bedrooms, internal level)
BS 8233:2014 "Sound Insulation and noise reduction for buildings"	L_{AeqT} = 55 dB	Reasonable level for external steady noise. (gardens and patios).
	L_{AeqT} = 50 dB	Desirable level for external steady noise. (gardens and patios).
	$L_{Aeq\ 16\ hours}$ = 35 dB	Resting, living room day. (Internal – steady noise)
	$L_{Aeq\ 16\ hours}$ = 40 dB	Dining, dining room day. (Internal – steady noise)
	$L_{Aeq\ 16\ hour}$ = 35 dB	Sleeping, bedroom day (Internal – steady noise)
	$L_{Aeq\ 8\ hours}$ = 30 dB	Sleeping, bedroom night (Internal – steady noise)

From the above the following noise levels are considered acceptable;
Gardens, daytime – 55dB
Bedroom, daytime – 35dB
Bedroom, night – 30dB

Note: A typical double glazed window reduces sound pressure by 25 - 30dB (weighted).

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Odour Assessment

The impact of odour from the fish bar has been assessed using the methods described in the document 'Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems' by DEFRA, 2005. It is acknowledged that this document has been formally withdrawn to allow local authorities to develop their own guidance. To date no detailed guidance has been published by the local authority so Annex C of the above DEFRA document has been used to provide a robust assessment.

The risk assessment method looks at various factors, assigning scores to each factor. The total score provides a level of odour control required. The total is used to define the potential impact before any mitigation or abatement.

Criteria		Score	Details
Dispersion	Moderate	10	Discharging at 1m above eaves at 10-15m/s
Proximity of receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge.
Size of kitchen	Small	1	Less than 30 covers or small take away.
Cooking type (odour and grease loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish & chips.
		31	

A total score of 31 gives an impact risk as 'high'.

Noise Mitigation and Abatement

The proposed opening hours for the development are restricted to 11.00 to 03.00. It is assumed that planning condition may restrict hours. These timings mean that the appropriate noise levels to consider would be daytime levels. The most stringent level internally in a receptor property during the day is 35dB.

The noise source, the extract fan, is over 14m from the nearest residential window off site. With a measured sound output of 28dB at 10m this is below the lowest level of either standard for inside a bedroom at night (30dB), and considerably below the daytime recommended level. Therefore the fan does not require further mitigation.

The window of the nearest window of the onsite managers flat to the noise source is less than 10m, however the location of the proposed fan relative to the window means there is not a direct line of site between the receptor and the source. The sound output at the measured (on plan) distance of 8.3m has been calculated be 29.6dB, a level still acceptable and the roof construction between the source and receptor will provide additional mitigation.

In the situation at above windows of the receptor properties, background noise from the adjacent road and increased distance is expected to make the fan unnoticeable in the receptor properties during the hours of operation. A standard double glazed window can be assumed to reduce noise levels by 25bB.

Odour Mitigation

An impact risk as ‘high’ requires ‘high level odour control’, however as an extra protection a ‘very high level odour control’ has been specified on this site. The DEFRA guidance describes very high levels of odour control as;

Very high level odour control may include: 1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.4 –0.8 second residence time). 2. Fine filtration or ESP followed by carbon filtration and by counteractant/neutralizing system to achieve the same level of control as 1. 3. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1. 4. Fine filtration or ESP followed by wet scrubbing to achieve the same level of control as 1.

Maintenance must be carried out to ensure these performance levels are always achieved.

The system proposed for above windows is an ESP system followed by carbon filtration with a 0.4 – 0.8 second residence times. The system consists of a range hood drawing air into electrostatic precipitator (ESP 3000 unit). Treated air will then base through carbon filters before being discharged by the extract fan.

Maintenance Requirements

It is important maintenance is carried out on systems used for the control of odour to prevent build up of debris affecting performance. Frequency of maintenance depends on usage rates. The system will be put on a maintenance and servicing plan with the supplier.

Regular and routine cleaning of the range hood will take place daily by on site staff.

The first scheduled maintenance for the ESP unit by the supplier will take place at 8 weeks from use starting. Thereafter maintenance will take place every 4-12 weeks based on observed build-up of grease and be adjusted as needs dictate. The attached document details cleaning requirements.

The carbon filters will be changed every 6 -12 months depending on use.

Requirements

The extract fan will be cleaned quarterly and serviced every six months in line with manufacturers recommendations for its use as a kitchen extract.