SHARPS REDMORE

ACOUSTIC CONSULTANTS • Established 1990

Report

Environmental Noise Assessment

41 Parkway, Camden,
London, NW1 7PN

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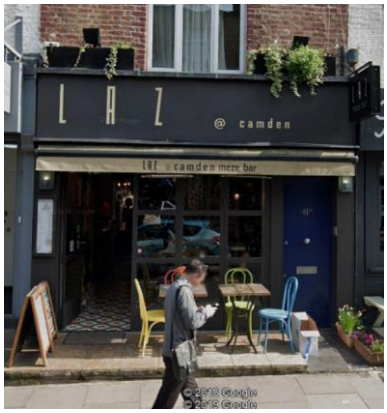
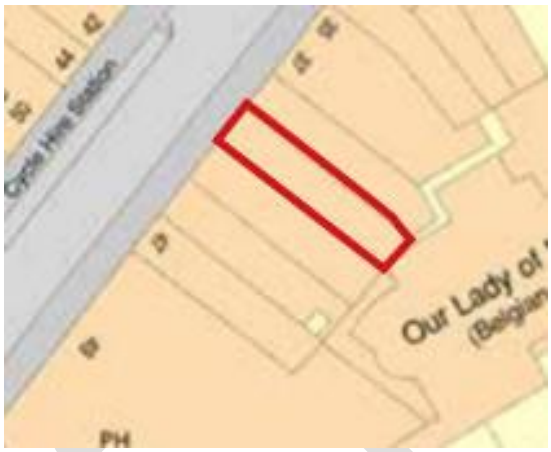
1.0 Introduction

1.1 Sharps Redmore has been instructed by Numan Devrim, the owner of Laz@Camden to carry out an assessment of the kitchen extract system at 41 Parkway, Camden. The site location is shown in Figure 1 below:

FIGURE 1: Site Location

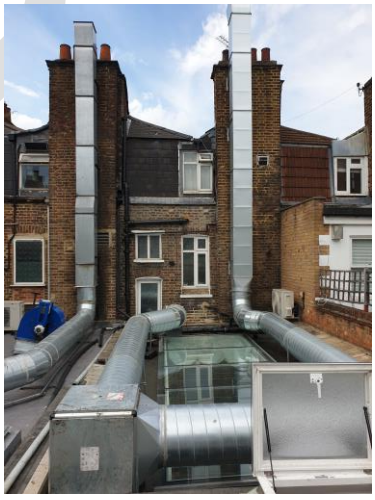




1.2 Retrospective planning permission[1] is being sought for the relocation of plant and kitchen extract system at 41 Parkway, Camden. A noise report (Reference 7380.PCR.01 – dated 9th April 2017) has been prepared by KP Acoustics which considers the impact of noise from the kitchen extract system. The report includes details of an environmental survey and based on fan manufacturer's data concludes that noise emissions from kitchen extract system would meet the requirements of London Borough of Camden, providing that mitigation measures, including the installation of an acoustic silencer, were carried out.

1.3 SR understands that since this assessment was carried out the proposed ductwork to kitchen extract has been altered which has resulted in the fan being re-located further away from the residential properties above the restaurant. A photo of the current system is shown below:

FIGURE 2: Existing ductwork and kitchen extract fan – 41 Parkway



[1] Planning Application Reference 2018/1262/P - Relocation of plant and kitchen extract system (retrospective)

1.4 The purpose of this report is to assess the existing kitchen extract installation to determine whether noise levels from the fan are compliant with the guidelines recommended by London Borough of Camden.

1.5 Section 2.0 of this report includes a discussion of the national policy and local policy and assessment criteria.

1.6 Section 3.0 of this report contains details of the environmental noise survey.

1.7 A guide to the acoustic terminology used within this report it is included in Appendix A to this report.

2.0 Assessment methodology and criteria

National Policy

2.1 The National Planning Policy Framework (NPPF), February 2019, sets out the Government's planning policies for England and "these policies articulate the Government's vision of sustainable development." In respect of noise, Paragraph 180 of the NPPF states the following:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation".

2.2 Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Policy Guidance (NPPG). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

TABLE 1: Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
		Lowest Observed Adverse Effect Level	
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in	Observed Adverse Effect	Mitigate and reduce to a minimum

Perception	Examples of Outcomes	Increasing Effect Level	Action
	the quality of life.		
		Significant Observed Adverse Effect Level	
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

2.3 The NPPF and NPPG reinforce the March 2010 DEFRA publication, "Noise Policy Statement for England" (NPSE), which states three policy aims, as follows:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

2.4 Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

"… all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur."

Local Policy

2.5 Reference is also made to Policy A4 'Noise and Vibration' of the Camden Local Plan 2017 which states the following:

"The Council will seek to ensure that noise and vibration is controlled and managed.

Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3). We will not grant planning permission for:

a. development likely to generate unacceptable noise and vibration impacts; or
b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.

We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development."

2.6 In relation to noise from industrial and commercial developments (Table C) Appendix 3 sets the following criterion.

TABLE 2: Camden Local Plan – Appendix 3 Table C – Noise levels applicable to proposed industrial and commercial development (including plant and machinery)

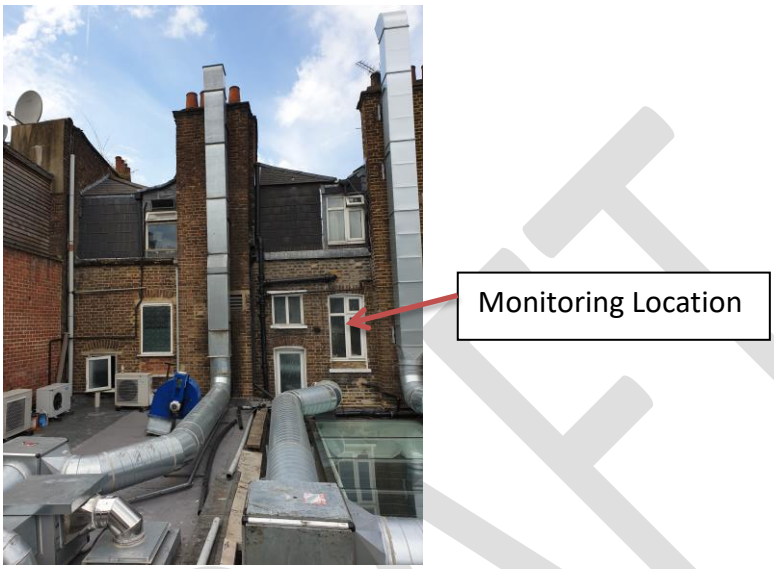
Existing Noise Sensitive receptor	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAEL (Red)
Dwellings	Garden used for main amenity (free-field) and outside living or bedroom window (façade)	Day	'Rating level' 10dB* below background	'Rating level' between 9dB below and 5dB above background	'Rating level' greater than 5dB above background
Dwellings	Outside bedroom window (façade)	Night	'Rating level' 10dB* below background and no events exceeding 57 dB L_{Amax}	'Rating level' between 9dB below and 5dB above background or noise events between 57 dB and 88 dB L_{Amax}	'Rating level' greater than 5dB above background and/or events exceeding 88 dB L_{Amax}

* If the noise contains audible tonal elements then 10 dB should be increased to 15 dB.

3.0 Noise Survey and Conclusions

3.1 To determine the impact of noise from the kitchen extract system a series of noise measurements were carried out on the 10th July 2019. As the application is retrospective it is possible to carry out actual measurements of the kitchen extract fan. Measurements were carried out a point approx. 1m in front of the window of the first floor flat, this being the nearest noise sensitive receptor. The monitoring location is shown in Figure 3 below:

FIGURE 3: Measurement Location



3.2 Weather conditions during the survey were dry, warm with clear skies. Weather conditions were suitable for taking noise measurements.

3.3 The kitchen extract system is installed on site and operational therefore to determine the impact of noise from the kitchen extract system measurements were taken with the without the fan operating. The results are shown below:

TABLE 3: Survey Results

Activity	L_{Aeq}	L_{A90}
Kitchen Extract On	60 dB	59.8 dB
Kitchen Extract Off	61 dB	60.4 dB

3.4 As can be seen from the results above and as observed at the time of the survey noise levels are dominated by plant noise. This included the kitchen extract at 43 Parkway and existing a/c units on the roof of both 43 and 41 Parkway. The ambient and background noise level with the kitchen extract operating did not increase the noise levels measured or change the character of the noise level observed when the kitchen extract was turned off.

3.5 Where residual (the ambient noise level without the specific noise operating) noise levels are high BS 4142:2014 advises that measurements should be made close to the source and the specific noise level calculated. In this case due to the close proximity of the adjacent plant this was not possible. It was therefore not possible to measure or calculate the specific noise in this case.

3.6 Notwithstanding the above the criteria required by London Borough of Camden is that noise from the plant should be at least 10 dB below the existing background noise level, measured without the fan operating. This criterion is significantly more stringent than that required by BS 4142:2014 which suggests that a low impact will occur if the rating level of the noise is below the background sound level. The main reason for the more stringent criteria is to avoid background noise creep. This occurs in built up areas where if each piece of plant was just below background noise levels the overall noise levels in the area would increase. To avoid this in built-up areas similar to the application sites it is not unusual for local authorities to more stringent standards i.e. 10 dB below background.

3.7 It is evident from the survey results that the operation of the kitchen extract system does not cause any increase in background noise levels or, as advised above, change the character of the noise climate in the area.

3.8 The noise level from the kitchen extract at the nearest residential properties is at least 10 dB below the existing background sound level. Therefore the noise level from the kitchen extract system at 41 Parkway complies with the noise criteria in Table 2 of this report and also the underlying aim of the Council not to increase background noise levels.

APPENDIX A

ACOUSTIC TERMINOLOGY

Acoustic Terminology

A1 Noise, defined as unwanted sound, is measured in units of decibels, dB. The range of audible sounds is from 0 dB to 140 dB. Two equal sources of sound, if added together will result in an increase in level of 3 dB, i.e. 50 dB + 50 dB = 53 dB. Increases in continuous sound are perceived in the following manner:

1 dB increase - barely perceptible.

3 dB increase - just noticeable.

10 dB increase - perceived as twice as loud.

A2 Frequency (or pitch) of sound is measured in units of Hertz. 1 Hertz (Hz) = 1 cycle/second. The range of frequencies audible to the human ear is around 20Hz to 18000Hz (or 18kHz). The capability of a person to hear higher frequencies will reduce with age. The ear is more sensitive to medium frequency than high or low frequencies.

A3 To take account of the varying sensitivity of people to different frequencies a weighting scale has been universally adopted called "A-weighting". The measuring equipment has the ability automatically to weight (or filter) a sound to this A scale so that the sound level it measures best correlates to the subjective response of a person. The unit of measurement thus becomes dBA (decibel, A-weighted).

A4 The second important characteristic of sound is amplitude or level. Two units are used to express level, a) sound power level - L_w and b) sound pressure level - L_p. Sound power level is an inherent property of a source whilst sound pressure level is dependent on surroundings/distance/directivity, etc. The sound level that is measured on a meter is the sound pressure level, L_p.

A5 External sound levels are rarely steady but rise or fall in response to the activity in the area - cars, voices, planes, birdsong, etc. A person's subjective response to different noises has been found to vary dependent on the type and temporal distribution of a particular type of noise. A set of statistical indices have been developed for the subjective response to these different noise sources.

A6 The main noise indices in use in the UK are:

L_{A90}: The sound level (in dBA) exceeded for 90% of the time. This level gives an indication of the sound level during the quieter periods of time in any given sample. It is used to describe the "background sound level" of an area.

L_{Aeq}: The equivalent continuous sound level in dBA. This unit may be described as "the notional steady noise level that would provide, over a period, the same energy as the intermittent noise". In other words, the energy average level. This unit is now used to measure a wide variety of different types of noise of an industrial or commercial nature, as well as aircraft and trains.

L_{A10}: The sound level (in dBA) exceeded for 10% of the time. This level gives an indication of the sound level during the noisier periods of time in any given sample. It has been used over many years to measure and assess road traffic noise.

L_{AMAX} The maximum level of sound measured in any given period. This unit is used to measure and assess transient noises, i.e. gun shots, individual vehicles, etc.

A7 The sound energy of a transient event may be described by a term SEL - Sound Exposure Level. This is the L_{Aeq} level normalised to one second. That is the constant level in dBA which lasting for one second has the same amount of acoustic energy as a given A weighted noise event lasting for a period of time. The use of this unit allows the prediction of the L_{Aeq} level over any period and for any number of events using the equation;

$$L_{AeqT} = SEL + 10 \log n - 10 \log T \text{ dB}.$$

Where

n = Number of events in time period T.

T = Total sample period in seconds.

A8 In the open, known as free field, sound attenuates at a rate of 6 dB per each doubling of distance. This is known as geometric spreading or sometimes referred to as the Inverse Square Law. As noise is measured on a Logarithmic scale, this attenuation in distance = 20 Log (ratio of distances), e.g. for a noise level of 60 dB at ten metres, the corresponding level at 160 metres is:

$$60 - 20 \text{ Log } {}^{160}/_{10} = 60 - 24 = 36 \text{ dB}$$