

Client: Chapman Ventilation Limited
Project: Cote, 32 Parkway, Camden, London
Reference: 140706-004A
Date: February 15, 2015
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1. INTRODUCTION

Various items of mechanical equipment associated with ventilation, air conditioning and refrigeration have been installed to the rear flat roof area of a commercial restaurant at 32 Parkway, London. The occupant of a residential dwelling on Arlington Road has raised concern of disturbance due to noise from the installed equipment.

ACA Acoustics Limited have undertaken two previous visits to site. Results of the noise surveys along with recommendations for suitable noise control treatments are set out in reports reference 140706-001A and 140706-002A respectively.

Following installation of various noise control treatments, ACA Acoustics have revisited site to ascertain the acoustic benefit of the installed treatments.

2. ACOUSTIC CRITERIA

Following discussions between the client and London Borough of Camden, the author has been advised that to comply with the limits of Camden at this site, noise from the equipment should be designed to not exceed a level 5dB below the prevailing background noise at 1m from the noise sensitive properties. At this level noise from the equipment should not be disturbing or detrimental to the amenity of the residential occupants.

3. NOISE SURVEY RESULTS

The repeat noise survey was carried out generally in accordance with guideline procedures set out in BS 7445 during the evening of 11th February 2015.

Access was arranged with the resident to undertake noise measurements from within the residential apartment. Noise levels were recorded at 1m from the rear bedroom window, facing towards the Cote equipment.

The survey was carried out using an NTi Audio type XL2 Class 1 sound level meter; the meter was calibrated before and after the survey using an NTi Audio calibrator with no change noted.

Summary results of the survey at 1m from the nearby residential property in terms of single-figure LAeq and LA90 statistical indices are shown in Table 1 below.

Description	LA90 dB	LAeq dB
All Equipment Operating (Prior to Switching Off)	53.6dB	54.7dB
Supply AHU only	53.2dB	54.0dB
Background (All Cote Equipment Off)	52.9dB	54.0dB
All Equipment Operating (After Switching On)	53.7dB	54.6dB

Table 1: Summary noise survey results

The Cote equipment was switched off for nominally a 5-minute period between approximately 21:35 and 21:40, due to special arrangement with the restaurant, to allow measurement of the background noise.

Measured background noise levels with the Cote equipment switched off were due to non-associated mechanical equipment serving other an unidentified property in the vicinity along with general traffic and pedestrian sources.

Measured background levels were higher than have previously been measured, albeit background noise levels measured during the last visit to site in October 2014 were recorded at LA90 52dB and LAeq 53dB (refer ACA Acoustics report reference 140706-003A); only 1dBA lower than measured during this latest survey, however the character of the background noise has changed to a dominant ‘hum’, typical of ventilation fans.

Although use of the measured ambient LAeq noise is useful to determine the specific noise of the equipment, notwithstanding the above it is considered that the lower background noise levels recorded during the original survey should be used as a basis for the acoustic design to provide a robust assessment and ensure there are no cause for complaint from nearby residents. Noise criteria for the equipment is set at 42dBA at 1m from the closest noise-sensitive properties.

4. ASSESSMENT OF RESULTS

Equipment noise from the Cote restaurant increases the background LAeq noise level by less than 1dBA. Corrected specific noise from the Cote equipment, accounting for the contribution from the background noise is in the region 45dBA. However, background sound levels will typically fluctuate by more than 1dBA itself and as such it is not considered possible to accurately quantify the exact specific noise level of the Cote equipment.

Whilst on site the author and the local resident agreed that it was not possible to subjectively identify any change in the prevailing noise when the Cote equipment switched on or off. This is a positive indication that noise from the Cote equipment is significantly below the current background noise level at the location of the closest noise-sensitive properties.