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51 FAIRFAX ROAD, LONDON

ENVIRONMENTAL NOISE SURVEY

Report **12150-ENS-01**

Prepared on 12 July 2017

Issued For:

Delicatessen

51 Fairfax Road

London

NW6 4EL

committed to CSCS Platinum award

ISO 17025

ISO 9001

Institute of Acoustics sponsoring organisation

Contents

List of Attachments

1.0 INTRODUCTION

Clement Acoustics has been commissioned by Delicatessen, 51 Fairfax Road to measure comparative environmental noise levels at 51 Fairfax Road, London. The measured noise levels will consider the effects on ambient noise levels at the rear of the restaurant during periods of restaurant opening.

This report presents the results of the environmental surveys followed by a discussion on the findings.

2.0 SITE DESCRIPTION

51 Fairfax Road is currently being used by Delicatessen as a restaurant. The restaurant currently operates to latest closing hours of 21:00, with proposals to extend closing hours until 23:00.

An assessment has been undertaken in order assess the impact of this on residential windows to the rear of the restaurant, in terms of any possible negative impact.

Surveys have been undertaken in order to assess whether operation of the restaurant during evening hours has an impact on prevailing ambient noise levels.

3.0 ENVIRONMENTAL NOISE SURVEY

3.1 Procedure

Measurements were undertaken at one position as shown on indicative site drawing 12150-SP1. The choice of this position was based both on accessibility and on collecting representative noise data in relation to residential windows overlooking the rear of the restaurant.

Continuous automated monitoring was undertaken for the duration of the survey between 17:15 on 18 May 2017 and 06:00 on 22 May 2017, during which the restaurant was open according to typical opening hours.

A further survey was undertaken between 14:20 on 30 May 2017 and 10:30 on 2 June 2017, during a period when the restaurant was closed.

Weather conditions were generally dry with light winds, therefore suitable for the measurement of environmental noise.

Background noise levels at the monitoring positions consisted of traffic noise from surrounding roads and train movements on the line directly above the restaurant, during both daytime and night time hours.

The measurement procedure generally complied with BS7445:1991. *Description and measurement of environmental noise, Part 2- Acquisition of data pertinent to land use*.

3.2 Equipment

The equipment calibration was verified before and after use and no abnormalities were observed.

The equipment used was as follows.

- 1 No. Svantek Type 977 Class 1 Sound Level Meter
- Norsonic Type 1251 Class 1 Calibrator

4.0 RESULTS

The $L_{Aeq:\ 5min}$, $L_{Amax:\ 5min}$, $L_{A10:\ 5min}$ and $L_{A90:\ 5min}$ acoustic parameters were measured at the location shown in site drawing 12150-SP1 and are summarised for the two surveys in time histories 12510-TH1-2.

5.0 DISCUSSION

5.1 Comparison of Surveys

During the first survey, a weekend, the restaurant was open according to current opening hours, until 21:00. During the second survey, the restaurant was closed for the Jewish holiday Shavuot.

By comparing the two surveys, it can be seen that there is no noticeable influence due to operation of the restaurant. Any noise influence due to plant units would appear as a steady, flat line, while if noise breakout from the restaurant itself was an influence, there would be noticeable drop-off in levels after 21:00, when the restaurant closes.

By comparing the levels during the 2 hour period after 21:00 when the restaurant closes, there is no discernible difference between the restaurant being open or closed.

5.2 Noise Emission Criteria

During an initial noise impact assessment to specify acceptable noise emission criteria for proposed plant units associated with the restaurant, the criterion was set at 33dB(A), the value 15dB below the operating hours background noise level.

It can be seen from the results table presented in initial report 12150-NIA-01 RevF that the minimum background noise levels during daytime (07:00 - 23:00) and current opening hours (08:00 - 21:00) are the same. As such, the criterion used in the assessment would provide the same level of protection for opening hours up to 23:00 as the background noise level is the same.

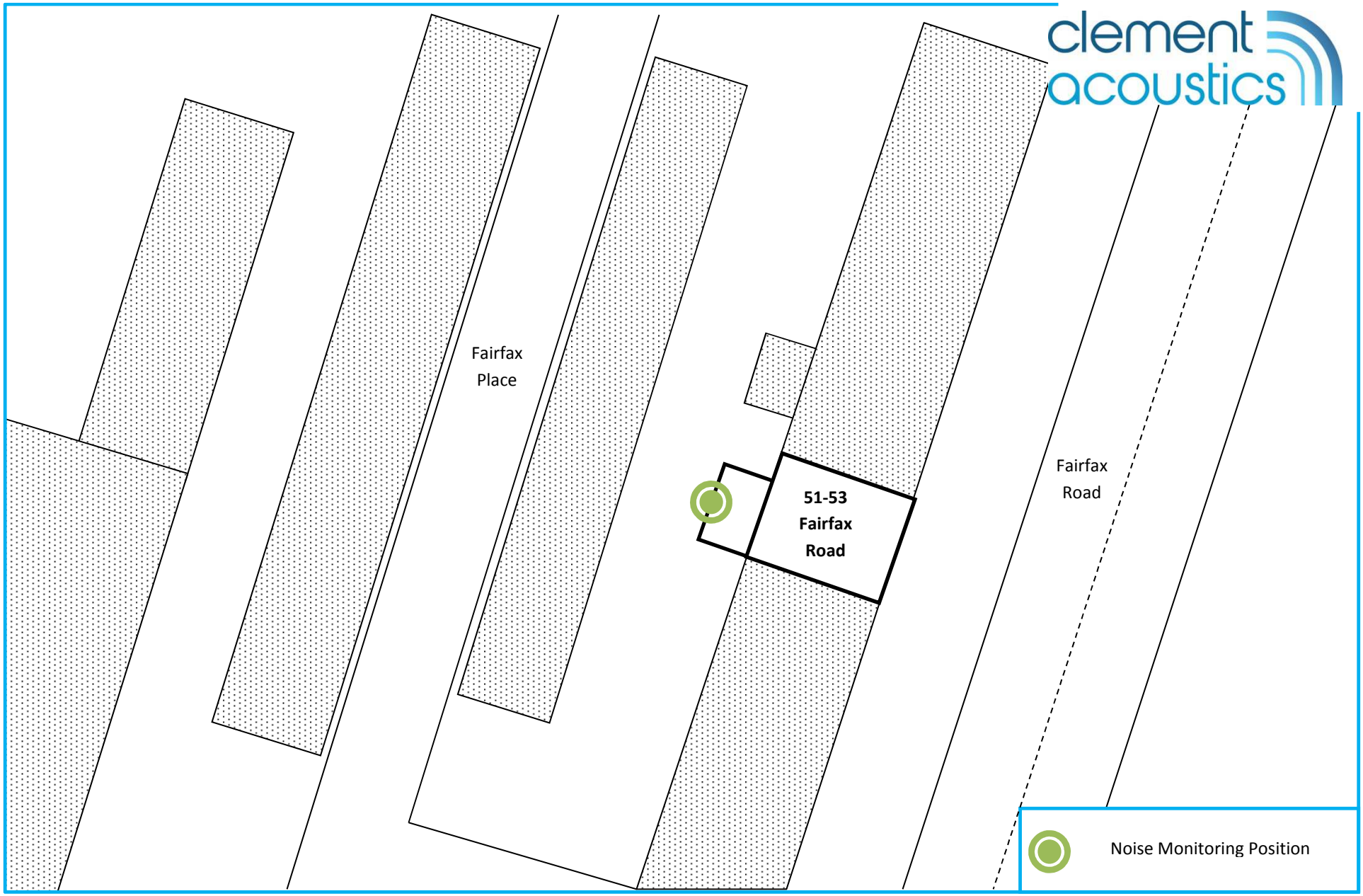
6.0 CONCLUSION

Environmental noise survey has been undertaken at 51 Fairfax Road, London. The results of the surveys have enabled a comparison of ambient noise levels during periods of the restaurant being open and closed.

As such, it has been established that operation of the restaurant is having no discernible influence on ambient noise levels in the area.

The comparison of the noise surveys and the inherent protection offered by already established noise emission criteria have demonstrated that extending the opening hours until 23:00 is not expected to have a negative impact on the amenity of residential receivers..

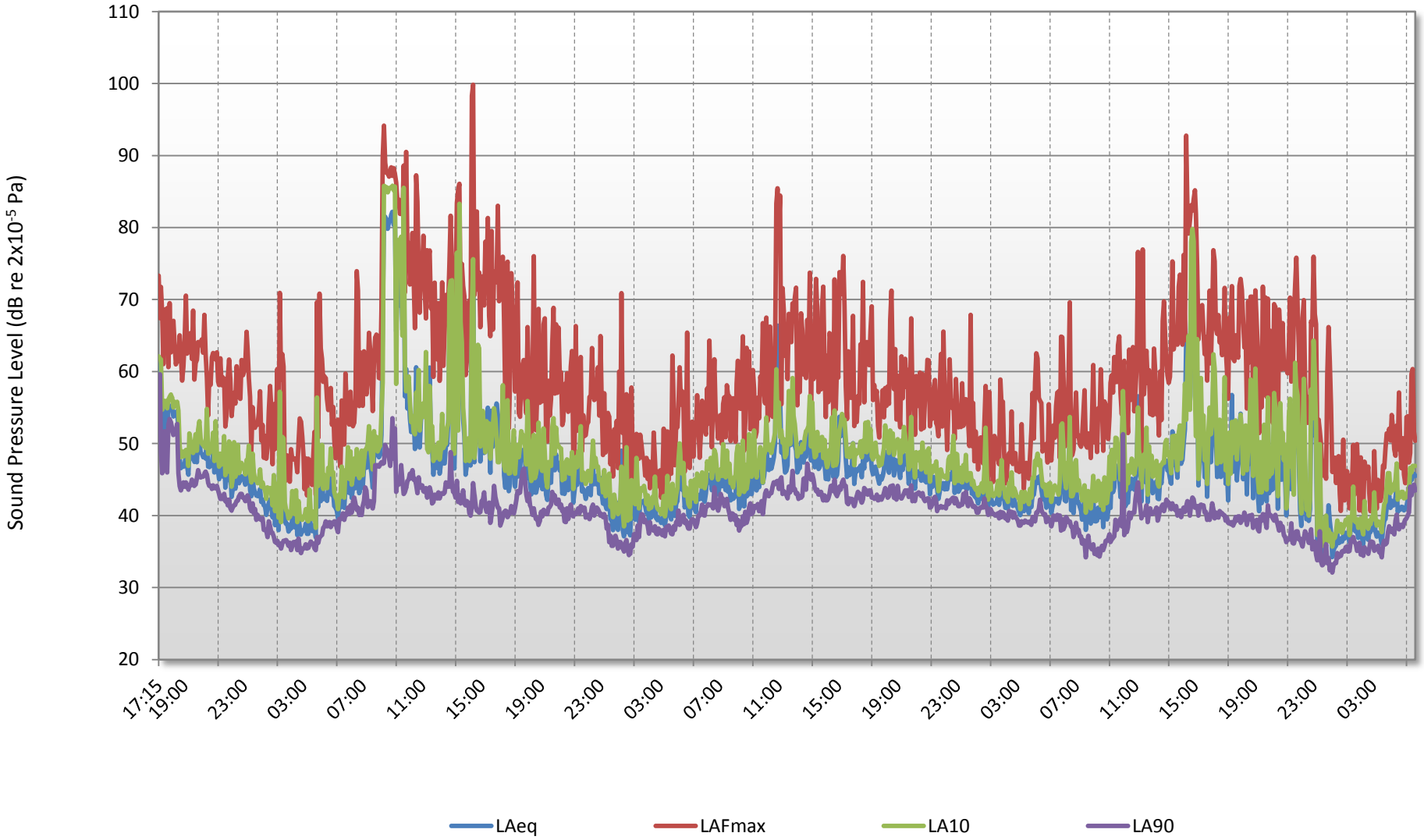
Report by	Checked by
Duncan Martin MIOA	**Florian Clement MIOA**



12150-SP1 Indicative site plan showing noise monitoring position **Date:** 12 July 2017

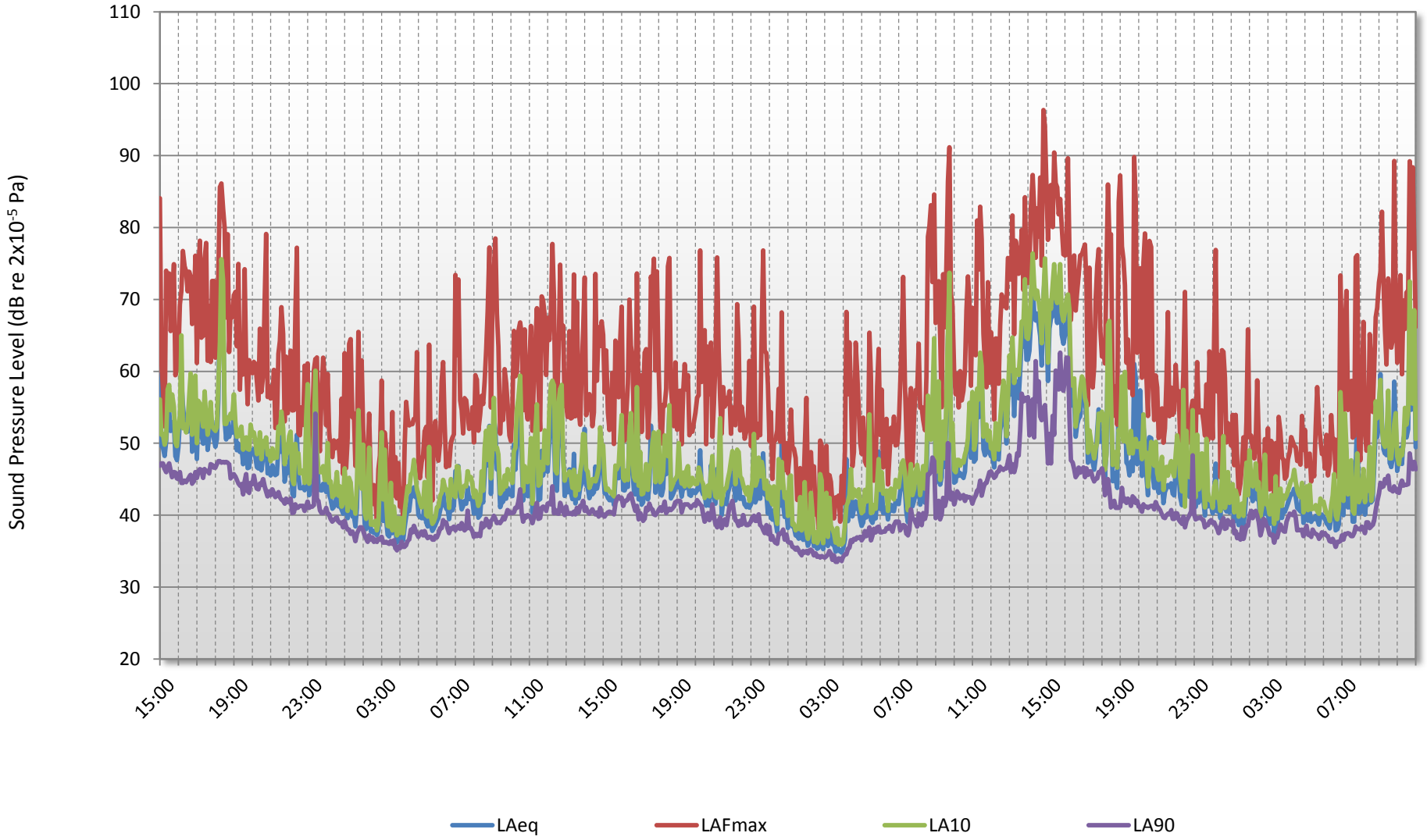
51 Fairfax Road, London [*Restaurant Open*]

Environmental Noise Time History
18 May 2017 to 22 May 2017



51 Fairfax Road, London [*Restaurant Closed*]

Environmental Noise Time History
30 May 2017 to 2 June 2017



APPENDIX A

GLOSSARY OF ACOUSTIC TERMINOLOGY

dB(A)

The human ear is less sensitive to low (below 125Hz) and high (above 16kHz) frequency sounds. A sound level meter duplicates the ear's variable sensitivity to sound of different frequencies. This is achieved by building a filter into the instrument with a similar frequency response to that of the ear. This is called an A-weighting filter. Measurements of sound made with this filter are called A-weighted sound level measurements and the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq}. The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for not more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise

L_{90}

This is the level exceeded for not more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 10 such octave bands whose centre frequencies are defined in accordance with international standards.

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than one alone and 10 sources produce a 10dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3dB for each doubling of distance.

Subjective impression of noise

Sound intensity is not perceived directly at the ear; rather it is transferred by the complex hearing mechanism to the brain where acoustic sensations can be interpreted as loudness. This makes hearing perception highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a reasonable guide to help explain increases or decreases in sound levels for many acoustic scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud
20	About 4 times as loud

Barriers

Outdoor barriers can be used to reduce environmental noises, such as traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and its construction.

Reverberation control

When sound falls on the surfaces of a room, part of its energy is absorbed and part is reflected back into the room. The amount of reflected sound defines the reverberation of a room, a characteristic that is critical for spaces of different uses as it can affect the quality of audio signals such as speech or music. Excess reverberation in a room can be controlled by the effective use of sound-absorbing treatment on the surfaces, such as fibrous ceiling boards, curtains and carpets.