

Suggestions for noise survey to be undertaken

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Introduction

Noise pollution is generally defined as regular exposure to elevated sound levels that may lead to adverse effects in humans or other living organisms. High noise levels can contribute to cardiovascular effects in humans and an increased incidence of coronary artery disease.[6][7] In animals, noise can increase the risk of death by altering predator or prey detection and avoidance, interfere with reproduction and navigation, and contribute to permanent hearing loss.

According to the World Health Organization, sound levels less than 70 dB are not damaging to living organisms, regardless of how long or consistent the exposure is. Exposure for more than 8 hours to constant noise beyond 85 dB may be hazardous. If you work for 8 hours daily in close proximity to a busy road or highway, you are very likely exposed to traffic noise pollution around 85dB. Taking this into account noise surveys are to be done to measure the noise level from different sources.

Sources of noise pollution

This type of pollution is so omnipresent in today's society that we often fail to even notice it anymore:

- Street traffic sounds from cars, buses, pedestrians, ambulances etc.
- Construction sounds like drilling or other heavy machinery in operation

- Airports, with constant elevated sounds from air traffic, i.e. planes taking off or landing
- Workplace sounds, often common in open-space offices
- Constant loud music in or near commercial venues
- Industrial sounds like fans, generators, compressor, mills train stations traffic
- Household sounds, from the television set to music playing on the stereo or computer, vacuum cleaners, fans and coolers, washing machines, dishwashers, lawnmowers etc.
- Events involving fireworks, firecrackers, loudspeakers etc.
- Conflicts generate noise pollution through explosions, gunfire etc. The dysfunctions, in this case, are likely caused by the conflict and insecurity and less by the noise pollution in itself, although that compounds stress levels too.

Scope of Work

The aim of this study is to conduct noise survey in different areas of Delhi where noise exposure is likely to be hazardous. Noise surveys typically involve the use of sophisticated sound measuring equipment (including type 1 sound level meters, external environmental microphones and low noise microphones) to describe the sound environment of an area.

- Undertaking a noise survey to firstly ascertain the level of noise
- And then assess the noise against the relevant standard, such as BS8233:2014 or BS4142:2014.

- Once the level of noise impact is assessed recommendations would be provided to mitigate the noise and ensure compliance with the relevant standard or local authority criteria.

Types of the survey

Occupational noise survey / risk assessment

The aim of an occupational noise survey is to assess the amount of noise or sound to which employees are exposed in the work place. The Center for Disease Control (CDC) estimates that 22 million workers are exposed to potentially damaging noise at work each year.

If an employee is exposed to a typical daily or weekly noise level that exceeds 80dB(A), an occupational noise survey and risk assessment must be undertaken to comply with the Regulations.

Background noise survey

Background noise surveys measure the day to day variations in sound level in an area.

Background noise surveys are often required for planning applications and by local authorities in order to ensure that either a new development will not generate unreasonable levels of noise or be adversely impacted by existing levels of noise in the area.

Whereas background noise can be assessed by several spot measurements (short attended periods), leaving equipment for a longer period of several

days. This allows a detailed review of the sound environment including diurnal variations and features of the sound environment, for example the dawn chorus or temporary noise from boiler flues that might otherwise be missed.

Noise impact assessment / BS4142 assessments

A noise impact assessment is a more detailed noise survey that expands from that of a more basic background noise survey. It typically involve an assessment of the background noise environment and comparison of this to either the measurement or prediction of the noise level generated by the proposed development.

The aim of a BS4142 noise survey is to firstly gain a baseline measurement of the prevailing background noise:

- Carry out an environmental noise measurement to assess the prevailing background sound level without the proposed industrial or commercial noise source in operation at the closest sensitive receptor
- An assessment of the noise emissions from the source of industrial noise under assessment is conducted. If the noise source is not yet operational, acoustic modelling will be undertaken to predict the level of noise emissions. If the noise source is operational noise measurements will be conducted at the closest sensitive receptor with the noise source active.
- The level of noise impact is analysed according to BS4142:2014 and the level in which the industrial noise exceeds the prevailing background sound level dictates the likely impact.

- We recommend and assess appropriate mitigation measures to protect the closest sensitive premises from noise.
- We will provide a technical report for submission to your local authority to support your planning application.

Noise nuisance survey and expert witness services

This would involve evaluating the decibel level of the noise, spectral content of the noise (pitch), background noise level in the absence of the noise etc.

Whether a noise is considered a nuisance takes in account of these factors but also considers frequency and duration of the noise, the character of the area, time of occurrence.

The objective noise levels can be compared to noise guidance (where applicable) and combined with observations of noise impact to determine whether a statutory or common law nuisance exists.

Other noise surveys

There are many other types of noise surveys that can be undertake, For example, entertainment venues often install noise limiters to ensure that excess noise generated within a venue does not cause adverse impact to neighbours.