

Calculation of Barrier Effect

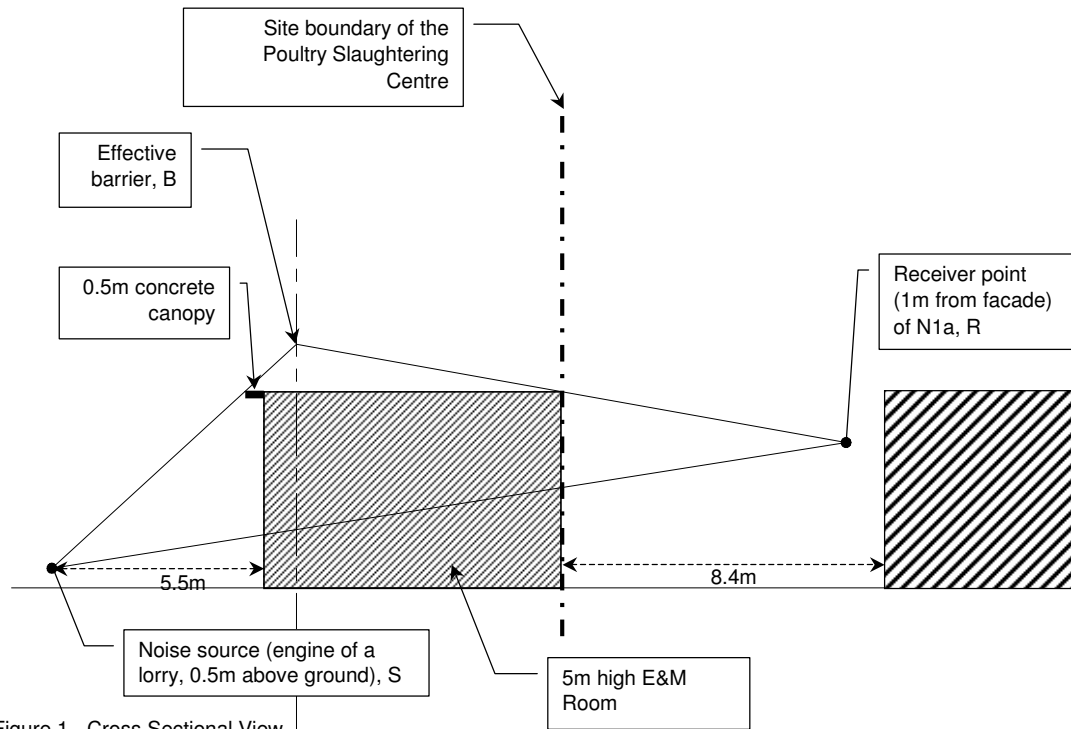


Figure 1 - Cross Sectional View

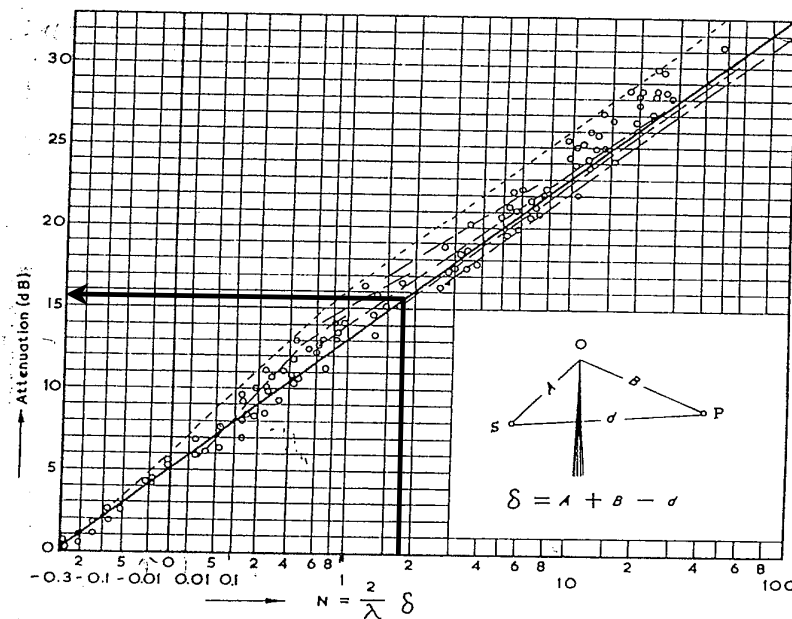


Figure 2 - Sound Attenuation by a Semi-Infinite Screen (Source: Figure 4 of the *Noise by Screen*, Z. Maekawa, 1968).

Calculation of Path Difference

Length of S-B-R	=	23.4 m
Length of S-R	=	21.2 m
Path difference (δ)	=	2.2 m
Dominant frequency*	=	125 Hz
Speed of sound	=	330 m/s
Wavelength (λ)	=	2.6 m
Fresnel's Zone Number (N)	=	1.7
Barrier attenuation	=	-15.5 dB
Adopted barrier attenuation	=	-15 dB

* - With reference to Section 6.2 of the *Transportation Noise Reference Book*, P.M. Nelson, Butterworths (1987), the levels in the 100 - 200Hz region are higher than in the mid-frequency range. Thus, 125Hz is considered to be the dominant frequency of a lorry.

** - The above barrier calculation is applied for the EIA Study for Provision of a Poultry Slaughtering Centre in Sheung Shui only.