



Acoustic Studio Design & Installation
Acoustic Consultancy
Project Management
International Design and Consultancy
Architectural Acoustics

SOUND PROOFING !

The first thing is – we do not “sound proof” a room !

In the real world what we can do is **ISOLATE** to a very high level

If somebody lands a helicopter outside – you will hear it – its not totally soundproof ! (*It could be but don't ask the cost*)

Isolation is the the ability to stop sound getting out or entering the area “to an agreed level.”

An ideal studio from an isolation perspective would be a concrete bunker in the middle of a field. Nice idea but we have never seen one. –So we need to design studios with the attributes of a concrete bunker, and that means weight a lot of weight.

We create isolation with heavy multiple panels separated by air gaps and decoupling layers not as heavy as concrete and certainly not as costly but still heavy and effective



BEWARE

“Whilst you can get a wealth of knowledge from board manufacturers web sites there is a world of difference between laboratory tests and the real world.”

Studio roofs have to be very heavy and fully sealed against the walls (and as heavy as the walls!)

Floors will transmit sound – both ways; they may have to be semi floated at least. Many are fully floated on variable compression neoprene blocks under sand filled sections



Doors and windows are the weak points – we manufacture acoustic door sets with magnetic seals, each set is circa 100kg (weight again) doors can drop circa 40dB provided they are built in well and fully sealed against air, that is usually not enough against an outer area alone and we would normally design in an acoustic lock

Sound is sneakier than water !

If air can get through so can sound, and it will!



Isolation or “Dropping sound” how we express it.

So what is this dB(A) thing?

Roughly speaking each 10dB(A) increase in sound level is perceived as a doubling of subjective loudness by the human ear.

So a jackhammer would be perceived as 16 times louder than a car on a motorway that is a 40dB(A) increase.

0-10dB(A) – Threshold of hearing depending on age etc assumes surroundings lower than level – unusual !

20 dB(A) – a whisper – or a very good voice studio,

25-28dB(A) – studio for radio, music, production, TV

30dB(A) – a quiet rural location or say a production studio not relying on accurate monitoring,

40dB(A) – a quiet office or living room

45dB(A) – A PC at 1m !!! - mine,

50dB(A) – Residential neighbourhood – general office,

60dB(A) – Conversation at 1 – 2m,

70dB(A) – Car at motorway speeds,

80dB(A) – Medium truck passing, petrol mower,

90dB(A) – Heavy truck passing or a typical nightclub!,

100dB(A) – Jackhammer,

110dB(A) – Rock band – too loud but the real world,

120dB(A) – Boeing 747 taking off – don't build a studio on a runway

The (A) bit is a weighting factor that is used to mimic the way the human ear records sound.

You see the problem:

Depending on the monitoring or sound produced we really need to drop minimum circa 60dB and if you are a rock band 70dB

The truth is acoustic studios require weight, significant sealing and decoupling, acoustic doors and windows and intelligent design

Unless of course you are in the middle of a field and it is always dead quiet.

