

## **SUSTAINABLE DESIGN AND ACOUSTICS**

## Sustainable Design and Acoustics

The close relationship between acoustics and sustainable design has become increasingly evident in recent years.

Taking account of acoustic conditions can greatly increase the overall comfort level of a space, while poor acoustics can result in hazardous, harmful environments. Acoustics can be applied to almost every design developments with palpable benefits, including functionality. Architects can apply acoustic solutions to most projects with ease and the selection of efficient, recycled acoustic products has never been better.

Sustainable design means far more than just using cast-off materials. A design expert must think about:

**Efficiency** - While many take energy (electricity) efficiency into account, employee efficiency is also very important to sustainable design.

Since people are usually a company's most precious resource, creating a space in which they can take full advantage of their productivity is key. Many studies persuasively document that noise is the number one (by far) obstacle to workplace efficiency.

**Health & Safety** - Hearing loss (from noise exposure) is one of the leading occupational hazards - and is 100% preventable. Employees that suffer from hearing loss are 55% more likely to have a workplace accident.





**Comfort** - Occupants in a loud space can feel tetchy, agitated, worried, unreceptive and aggravated, often without making the connection to noise.

**Functionality/Building Lifespan**- For a space to be doing well, it MUST function. An acoustically accurate atmosphere is overriding to the functionality of most spaces. You must consider acoustics in any space where

- Speech intelligibility is important (classroom, courtroom, boardroom, etc.).
- There is a PA system (airport, gymnasium, public building, etc.)
- Speech privacy is important (open office, call centres, etc.). Confidentiality is important (doctor's/counsellor's office, HR, legal office, police facility, etc.).
- Music is important (performance space, concert hall, recording studio, etc.)
- Both speech and music are important (worship centre, ballroom, theatre, multi-purpose room, etc.).
- A quiet atmosphere is important (library, museum, healthcare facility, etc.).
- Noise build-up can be problematic (restaurant, lobby, mall, etc.).

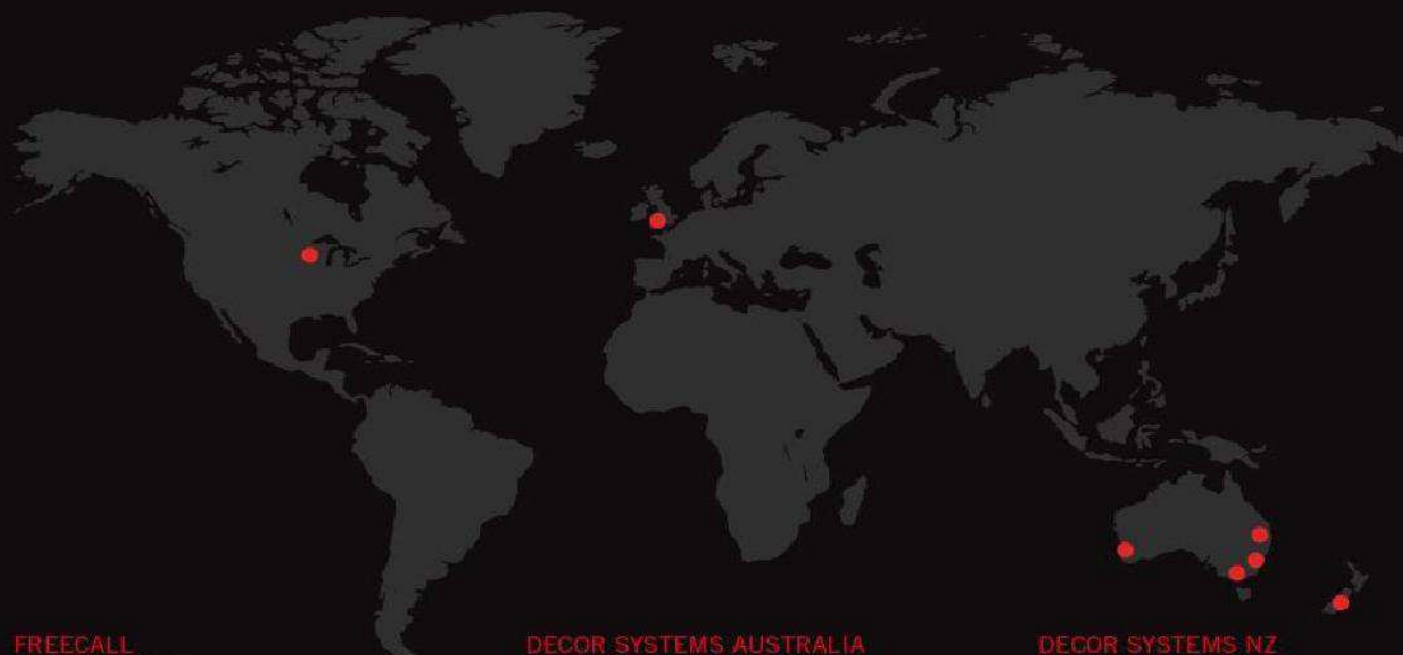




This also applies to building longevity. If a space does not function, how can you hope for building longevity?

**How the Building Impacts the Environment** - The operation of the facility should not harm (pollute) the environment. Although controlling/limiting light pollution is very important, noise pollution can be far more annoying and harmful. Additionally, noise is much more difficult to limit.

**Use Recycled (Sustainable) Materials** - There are many recycled/sustainable acoustic products that work as well as (or better than) non-recycled acoustic products. Acoustic products can account for a large percentage of the materials in a space. Often, most (or all) of the ceiling, most (or all) of the flooring, and some to most (and sometimes all) of the wall surfaces are acoustical.



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