

## Acoustics in Commercial Buildings

*In an environment where time is money, a commercial building's design must create an efficient, productive and healthy working atmosphere. A good acoustic design is fundamental in achieving this. There are also two relatively easily achievable Green Star credits on offer.*

**T**ime is money. Where is this truer than in a commercial building; per hour billing, fixed-fee contracts, crucial targets that cannot be delayed, critical staff that can't afford to be off sick? No sane CEO would want his staff to work in an environment that makes them work less effectively with a loss of concentration and raised stress levels.

The building's acoustic design (or lack thereof) directly affects the company's profitability. It also reflects well (or poorly) on the company to their clients. A building with poor acoustics will struggle to get or maintain tenants.

### A good acoustic environment

People work better when they are put in an environment that encourages it. A good acoustic environment reduces stress by controlling the level of noise invading your work space, and sculpting the noise that is there.

Acoustic absorption will make the working space comfortable and not too echoic. The acoustic walls around private or noisy rooms will stop enough sound to keep speech confidential, or to stop noisy activities in one room from affecting the use of adjacent areas.

### Appropriate internal noise levels

Green Star offers two credits for internal noise levels. The targets are based on SANS noise targets and recognise that people can't work effectively if their environment is too noisy. A bit of background noise is often helpful in improving privacy and making people more comfortable (too quiet and people become very self conscious). It can be taken too far though, as noted by SANS 10103:

Where acoustic masking is employed, a rating level in excess of 45 dBA and a sound spectrum containing predominantly low frequencies could give rise to other problems, i.e. fatigue or lack of concentration.

The target noise level in an office is therefore a bit of a Goldilocks issue: too quiet and staff feel uncomfortable doing their job and have less speech privacy between rooms; too noisy and they can't concentrate and stress levels increase. It has to be "just right".

### One building, many uses

A modern commercial building is often a hub including many different activities, including cafeterias, kitchens, gyms, meeting rooms and function venues.

Each activity offered must make the building better: noise from one must not disturb another. It is convenient to

*"The building's acoustic design ... directly affects the company's profitability"*

have a cafeteria downstairs, but not if staff near the cafeteria can't hear themselves think every time the espresso machine fires up! Why have a standby generator if it makes the offices too noisy to work in and

the staff go home anyway?

### External noise levels and the law

Noise disturbance to neighbouring buildings is regulated by law. It is a criminal offence to create a noise disturbance, a law which is now being more strongly enforced than before. Generators are often the main culprits (and accordingly need a Noise Impact Assessment done with their permission application) but don't forget noise from function rooms that are used at night. It is always cheaper to design it right the first time.

### SRL: experts in building acoustics

Every commercial building is unique. Modern designs don't follow a tired template, which means new design challenges on every project. You cannot afford to use inexperienced consultants that hide behind one or two designs. We have over 40 years' international experience in delivering practical and buildable solutions to new design challenges.

Call us on +27 21 680 5305. We'll help you make your building a great financial investment: more cost effective, easier to let and a better place to work.