

THE BASICS OF CONTROLLING NOISE

Although it may seem like a daunting task, it is possible to control noise. Once sound has escaped from its source, we are able to prevent or reduce its effects by blocking its path and/or by carefully altering the receiver.

i) At the source

Ideally, noise control should start at the source of the sound. Methods of noise management include using damping materials and isolating the vibrations (e.g., placing rubber pads beneath appliances on the countertops). Noise sources can also be surrounded with an enclosure or screen consisting of a solid barrier (plywood, gypsum board, sheet steel) on the outside and a sound absorptive layer such as sound tiles or fibreglass insulation on the inside.

ii) Along the path

Factors that reduce the intensity of noise along the path include:

Distance

As sound waves expand outward from their source, they become less intense (loud). The farther away you are from the noise source, the more the sound intensity decreases.

Absorption and weather

As sound waves pass through the atmosphere, they lose energy to air molecules. Wind and temperature gradients affect sound by bending sound waves either towards or away from the earth's surface.

Ground effect

When sound waves pass near soft, porous surfaces such as lawns, gardens, fields or woodlands, their intensity is reduced at locations near the ground. Therefore, if you have a lawn or flower garden in your front yard rather than a paved driveway or patio, traffic noise levels at the front of your home will be lower.



Garage door openers are a common source of noise, which can be reduced by using vibration isolating mounts.



SOUND MYTH: Sound goes up.

SOUND TRUTH: Unlike hot air, sound/noise does not rise. Most common noise sources tend to radiate sound evenly in all directions and sound tends to continue travelling in a straight line until it encounters a solid object or until wind or air temperature gradients cause it to bend.



Noise barriers

One of the best methods of minimizing noise is to erect a noise barrier, generally in the form of a vertical wall, to block the path. Noise barriers need to be airtight and made of a sufficiently thick or dense material such as concrete boards.

Typically, barriers are only successful when used adjacent to highways or freeways as these locations provide enough space for proper installation. For a noise barrier to protect your home it would need to extend well beyond the section of road immediately in front of your residence and be tall enough to block the line of sight from your home (windows, doors, patios) to the vehicles. For multi-storey houses, this becomes very difficult to achieve.

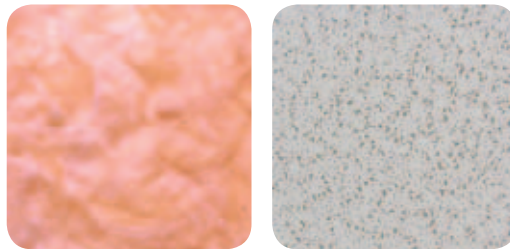
The City of Vancouver permits 1.2m high fences at the front of your property and 1.8m high fences along the sides and rear of your property. These heights ensure a comfortable urban environment, while at the same time providing some privacy.



Noise barriers are most effective when placed on freeways as they can protect homes while ensuring that noise is not reflected back on the adjacent areas.

iii) At the receiver

Using sound absorbing materials in and around your home can help reduce noise. The tiny pores and passages in materials such as heavy fabric, draperies, carpeting, upholstery, glass or mineral-fibre insulation, acoustical ceiling tiles (sound tiles) and open cell foam rubber let sound waves in, and then dissipate them.

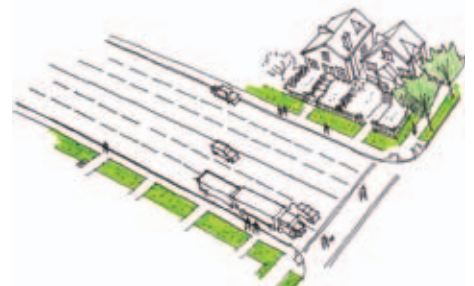


When properly installed, fibreglass and other insulation types work well to absorb sound.



SOUND MYTH: Weather doesn't have an impact on noise levels.

SOUND TRUTH: Noise is affected by weather such as snow and rain. When there is water on the roadways more noise is generated by tires rolling over wet pavement. However, snow, which is porous, absorbs sound resulting in a quieter city.



SOUND MYTH: A row of vegetation can be an effective noise barrier

SOUND TRUTH: Planting a row of hedges, trees or bushes across your property doesn't significantly reduce noise since there are too many gaps to be effective. But dense vegetation placed in front of a fence, wall or building will absorb some sound energy.

