



NOISE WALLS

For most Australians, road noise is one of the most significant neighbourhood noise issues. The challenge for governments and developers is to provide liveable spaces in metropolitan communities alongside major roads, highways and railways to facilitate daily commutes and traffic flow. Also known as acoustic, sound or noise barriers, noise walls provide the solution to this development issue. Driving along countless freeways and highways around the country, noise walls that are constructed from various materials - but most commonly precast concrete - line the roadside.

More to noise walls than meets the eye

As their name implies, noise walls are designed to reduce the transmission of noise. Every development is assessed to determine what type of precast noise wall is best suited. Reflective barriers are usually high walls alongside the road edge to reflect traffic noise. Although some sound still passes over the barrier, the noise level on the other side is generally low in relation to the traffic noise.

Another form of noise wall is the dispersive barrier. These distribute noise upwards or downwards, depending on their incline and surface pattern. Absorptive barriers, as their name implies, absorb the sound by forcing the sound pressure waves to move in and around many tiny fibres or passages to dissipate the sound energy. In some cases, the best solution may be a combination of barrier types.

Why precast noise walls?

There are numerous advantages of constructing noise walls with precast concrete. Being manufactured off-site in a controlled factory environment guarantees a high quality product, excellent finishes and a fast construction time. Installation is simplified and safer as less trades people are required on site. In addition, precast has the added benefits of being sustainable, as well as durable and low maintenance. The countless options of high quality surface finishes that are on offer also ensure a pleasing aesthetic solution. Striking designs can be achieved with finishes including smooth off-form, stained



or painted off-form, water-washed exposed aggregate, acid-etched, sand-blasted exposed aggregate. Patterns can also be incorporated for added interest using form-liners.

Shell Cove walls blend with surrounding landscape

The 2.5 kilometre noise wall at the Shell Cove development, 20 kilometres south of Wollongong in New South Wales is a great example of an aesthetically sympathetic and effective precast concrete noise wall. The need to address road noise was a priority for residences close to the existing Bass Point Quarry. In this case, texture and colour was added to the precast panels and the noise walls were installed with the patterned side positioned towards housing. A black pigment was added to the concrete mix, providing a low maintenance colour that fit in with the aesthetics of the development and the local landscaping.

Glass reinforced precast concrete (GRC) – the lightweight solution

Glass reinforced walls are another precast concrete product often used for noise walls. Manufactured using glass-reinforced concrete, this cement based composite material has alkali-resistant glass fibres randomly dispersed through the product. The GRC walls are strong and lightweight, and used extensively by roads authorities throughout Australia.

One of the largest and most prominent GRC noise wall projects is a section of the busy M4 motorway in Parramatta. About 1400 GRC panels were used to line both sides of the viaduct, along with on and off ramps.

They were chosen because of their weight, coming in at about one-tenth of the weight of an equivalent precast concrete panel. Bold patterns and colours were chosen to ensure the noise walls are a distinctive feature of this motorway. The use of GRC also allowed minimal disruption to traffic flow during installation.



The M4 is one of the busiest roads in the country and only a single lane was closed during the fixing of the panels.

Although precast concrete noise walls are most commonly used alongside roads to reduce traffic noise, they have a variety of other applications including railways, bridges, shopping centres, parking structures, tunnels and airports.

Want more information?

To talk to a National Precast member who can manufacture noise walls, visit www.nationalprecast.com.au.

