



Environmental sound barriers: a mixed blessing

Busy roads have major impacts on the environment of surrounding areas, with noise pollution from traffic being one of the biggest problems. Building sound barriers alongside the road is a common way to minimise such noise. A recent study highlights the benefits and disadvantages of sound barriers.

Earth mounds, fences or walls are frequently constructed as sound barriers alongside busy roads and should last for at least 40 years. Environmental earth barriers, or berms, made from soil, stone, rock or rubble can be shaped to blend in with the natural environment. If planted with indigenous, hardy vegetation, these barriers lessen the visual impacts of highways, minimise maintenance, reduce erosion and snow accumulation. They also support wildlife and reduce the impact of car headlights on neighbouring homes.

The study used Environmental Impact Assessments¹ (EIAs) to investigate sound barriers. EIAs evaluate the consequences of major developments for the environment and can also be a useful tool in planning and decision-making. The researchers point out that working with all affected parties through an EIA in the planning stages makes acceptance of the barriers more likely.

The study surveyed residents living close to a sound barrier built of prefabricated concrete panels. The main benefit cited by householders was better quality of sleep. Other benefits included: making conversations easier to hold, enabling windows to be open more often, less dust and greater privacy.

Despite reducing noise pollution, negative impacts of sound barriers were also identified, affecting both people and the surrounding environment. For wildlife, roads present physical barriers to animals, dividing populations and cause a number of deaths through collisions with vehicles. Long vertical barriers were found to exacerbate these problems, particularly for smaller animals. Ecoducts built over the roads as animal crossings, can partly solve this problem.

Although barriers can significantly reduce road noise for residents, one of the most disliked aspects of the barriers is that they block views. Loss of light, especially sunlight, was the most common complaint followed by a restricted view. A more natural barrier would have been preferred, especially as the concrete panels had been vandalised and poorly maintained. Innovative solutions have been introduced to improve views, including gateways and special corridor designs.

The study recommends that:

- barriers should be placed as far from residents as possible
- barriers should blend in with the neighbourhood where possible
- barrier design should be incorporated at the beginning of projects and shaped by ecological considerations as well as the impacts on road-users and residents
- natural barriers are preferable, covered with native vegetation to make the structure more aesthetically appealing

1. See: <http://ec.europa.eu/environment/eia/eia-legalcontext.htm> for information about the Environmental Impact Assessment Directive of the European Community

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