

BY ERNST ZÖLLNER, DEPT OF PLANNING, UNIVERSITY OF AUCKLAND

NOISE MITIGATION

WHAT EFFECT WILL A
RETURN TO ZONING, AS A
MEANS OF CONTROLLING
NOISE, HAVE ON URBAN
DESIGN?

The dramatic arrival of urban intensification in Auckland and Wellington has belatedly focused local and national attention on the possible adverse effects of noise on human health.

Wellington City Council is, for example, about to introduce new noise mitigation measures in its District Plan that cover the entire central city. But these new rules exclude noise from land transport, and this is the gap that the Ministry of Transport is trying to address through its broad-based policy review of land transport noise management.

While this increased focus on urban amenity and public health issues is very timely and therefore welcome, some of the muted policy responses may not be.

Danger 1: Separating land uses

There is increasing talk in transport circles of the need to separate "noise sensitive" land uses from noise generators such as busy streets, railway tracks and industry. This simplistic solution may do more damage than good. Diverse and mixed land uses enliven streets and areas by bringing together different people for different purposes and greatly improve the efficiency of our urban areas.

A return to zoning through noise management standards has the potential not only of creating streets that are desolate for a large part of the day, but also to increase travel demand and all the other inefficiencies that old-style zoning created before the RMA sought to remove it as a planning tool.

In terms of noise management we should plan around noise-sensitive buildings rather

than noise-sensitive land uses. A well-designed, robust building next to a busy street can house noise-sensitive uses such as churches, hospitals and schools very successfully. Land use is the wrong target for noise management - better design of streets, buildings and city blocks are the correct targets.

Danger 2: Creating blank "noise mitigation" walls

Nothing destroys streets as effectively as blank walls built for noise mitigation or any other purpose. They suck the life out of a street by reducing its vitality, safety and visual quality. Motorways are the only type of street where roadside screens have an acceptable role - by definition motorways are pipes for vehicles, and are as such already separated from adjoining uses.

Danger 3: Setting buildings back from the street

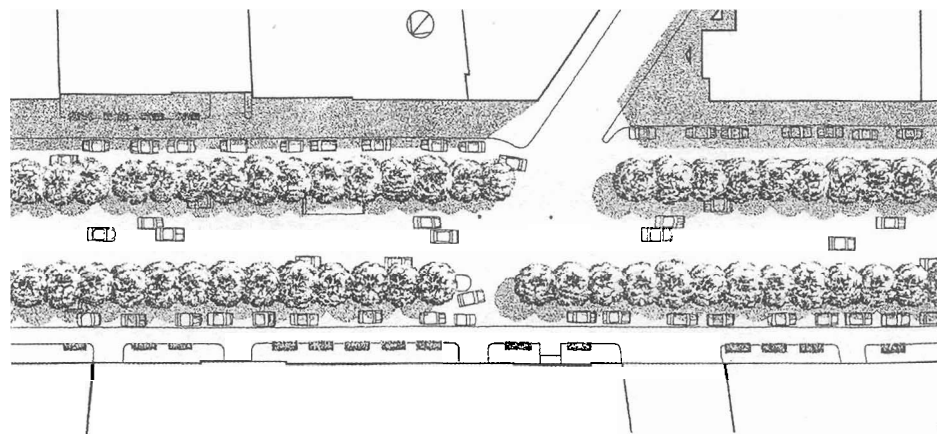
Great streets have definition, i.e. boundaries that communicate clearly where the edges of the street are, making it a place. There is vertical definition (the height of building and walls) and horizontal definition (the length and space between buildings and walls). Requiring setbacks of buildings from the street edge destroys the relationship between vertical and horizontal definition by creating spaces that are too wide to be comfortable in. Also, within our urban land budgets we can't afford to increase the amount of land that land transport occupies.

Better solutions

Most of us want to build cities and towns in New Zealand that have great streets. Jacobs (1995) defines great streets as:

1. Streets that help make community -

Heavy traffic volumes and noise-sensitive land uses can exist together very well in beautiful but well-designed streets such as this boulevard. Drawing by Allan Jacobs in Great Streets, 1995 reprinted with permission from MIT Press.





This busy and noisy street in St Petersburg in Russia houses several "noise sensitive" activities successfully. The answer to mitigating noise is to get the design of buildings, street blocks and streets right.

streets should be accessible to all, easy to find and easy to get to

2. Streets that are physically comfortable and safe
3. Streets that encourage participation -

allowing activities to take place within and alongside

4. Streets that are remembered.'

Noise from land transport does not create poor streets. Some of the most celebrated, admired, popular and expensive streets in the world (and New Zealand) have very high traffic volumes and associated noise levels.

How is it possible to have great streets (at any scale) and achieve sufficient noise mitigation?

Opportunity 1: Design streets right


Streets are linear spaces - their width, components, surfaces and management all determine the noise spillover onto adjoining buildings and spaces.

The boulevard is an excellent example of how to mix high and fast-moving volumes with slower traffic and dense planting that acts as a noise barrier (refer figure 1). Street trees and planting provide excellent amenity and shelter that addresses not only noise mitigation, but also a range of other functions.

Opportunity 2: Design buildings right

Buildings need to be designed to meet the needs of their context. If the context is that of busy streets, then the materials and layout should be used to shelter the users of buildings from noise when required. Good architecture and site layout will allow for change over time.

Opportunity 3: Shape city blocks right

Good city blocks use robust buildings fronting busy streets to shelter more noise-sensitive buildings behind them. There are two aspects to such shelter: the height of the 'front row' buildings should be sufficient, and there should be as few gaps as possible within the 'wall' of buildings fronting a city block. Often buildings on busier streets will have a retail character at ground floor and commercial upstairs, with more sensitive buildings away from the noise housing offices and residential uses. 

REFERENCE

Jacobs, Allan B. (1995) *Great Streets*, Cambridge, Massachusetts: The MIT Press.