

- PROBLEM -

Noise pollution is a major health issue, especially in urban environments where traffic noise is very pervasive. It is estimated that traffic noise related disease accounts for a per capita loss of life of between one and two days per year, making noise pollution the second largest cause of disease, surpassed only by air pollution.

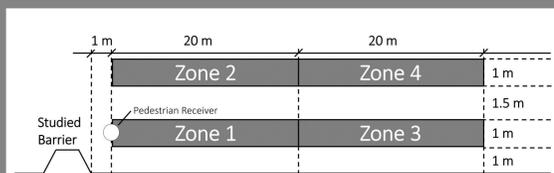


- OUR GOAL -

To research and compare the efficacies of several technologies for reducing traffic noise in space-limited urban environments, thereby determining which is optimal for implementation in cities.

- RESEARCH STRATEGY -

To ensure that we could effectively compare the noise abatement of these technologies, we made sure to only consider those that could be implemented within the confines of an enclosed urban setting. *Below*, the layout for measuring the efficacy of the low barrier is depicted.



- PROPOSED TECHNOLOGIES -

LOW-HEIGHT BARRIERS

- 1 meter tall
- 40 cm wide
- Alongside roadways
- Deflect/absorb road noise

5.5 dB



A low gabion wall

GREEN FACADES

- Vertical greenery systems
- Mounted on sides of buildings
- Absorb traffic noise
- *Insulate* buildings from noise

1 dB



A green facade

BURIED RESONATORS

- Small cavities built into road
- Deaden road noise by resonating
- Used commonly with porous asphalt

3 dB



Laying buried resonators

POROUS ASPHALT

- Asphalt with crevices that absorb sound
- Also good for drainage
- Used commonly along with buried resonators

3.45 dB



Porous asphalt

- CONCLUSION -

Each of these four solutions provides a significant reduction to noise through different processes. We believe that each of them can be efficiently placed in cities and that each of them provides benefits that extend beyond just reducing noise. However, we highly recommend that cities to look to implement low-height acoustic barriers along roadways as an efficient way to reduce noise pollution. These barriers not only had the largest impact on traffic noise, but they also can be implemented in urban environments regardless of climate, and require less maintenance than the other options.



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- REFERENCES -

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