

# WOOD-CONCRETE HYBRID SOUND ABATEMENT WALLS

## LOCATION

Various locations in the Lower Mainland: South Fraser Perimeter Road, Marine Drive in Burnaby, and McCallum exit in Abbotsford

## SIZE

About 1,300 lineal metres

## RECOGNIZED PRODUCT

The wood-concrete hybrid system is on the Ministry of Transportation and Infrastructure's Recognized Products List for sound reflective products

## SUPPLIERS

Western Forest Products, Vancouver; Visscher Lumber, Chilliwack; Western Wood Preservers, Aldergrove; Taiga Building Products, Burnaby

## INSTALLERS

Pacific Fence-Crete Ltd., Aldergrove; Strohmaier Excavating, Chilliwack

## PROJECT OWNER

City of Burnaby, Ministry of Transportation and Infrastructure

## B.C. GOVERNMENT MINISTRY

Ministry of Transportation and Infrastructure

## PROJECT OVERVIEW

British Columbia communities looking for ways to reduce their environmental impact are finding that wood is a less expensive, lightweight, sustainable and attractive option for reflective or absorptive sound walls along highways to reduce traffic noise.

In the Lower Mainland, four recent projects were completed, which incorporated roughly 1,300 lineal metres of a wood-concrete hybrid to construct sound abatement barriers. These projects included a perimeter road for the new Port Mann Bridge and a demonstration project at McCallum Road in Abbotsford. The wood in these reflective walls effectively neutralizes sound and, in other applications, can even absorb noise.

When wood is used, the barriers are lighter, have greater strength-to-weight ratio than other building materials, and

are much easier to build. They can be installed in four-metre lengths, with fewer posts and less disturbed ground. In most cases, heavy machinery is not needed, which is important in a tight urban setting.

Wood costs less and offers a natural solution that delivers environmental benefits, especially when the products are from forests that meet third-party certification standards. With proper construction and treatment, wood barriers are resilient and durable, and are expected to last more than 30 years.

The wood barriers are also successful projects on an aesthetic level, preferred by nearby residents who appreciate the natural appearance.



Photo courtesy of Ministry of Transportation and Infrastructure

*“The use of wood as a noise barrier has helped the South Fraser Perimeter project in several ways including ease of construction, [it is] aesthetically pleasing to residents and travelling public, and the price point of this product has helped with budget concerns.”*

**Vern Lange**, Senior Project Manager, South Perimeter Road  
Ministry of Transportation & Infrastructure

## WOOD FEATURES

### **COST EFFECTIVE, FLEXIBLE**

The final cost of the kind of wood-concrete hybrid system used in the Lower Mainland is about \$110 per linear foot, or less than \$14 a square foot. Wood is lighter, more flexible and easier to install; it uses fewer posts and does not require heavy machinery.

### **DURABLE AND EFFECTIVE**

Appropriate milling and conditioning ensures the wood lasts as long as other materials under similar conditions. The tongue-and-groove construction delivers an acoustical performance exceeding North American requirements of 20 to 30 sound transmission class. Wood barriers are tough: rocks and other highway debris are not as likely to cause damage and neutralize their effectiveness, and they are an excellent choice in colder climates where roads are treated with salt.

### **NATURAL, ATTRACTIVE**

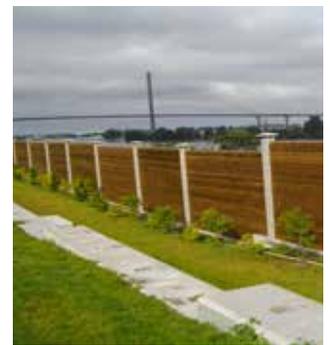
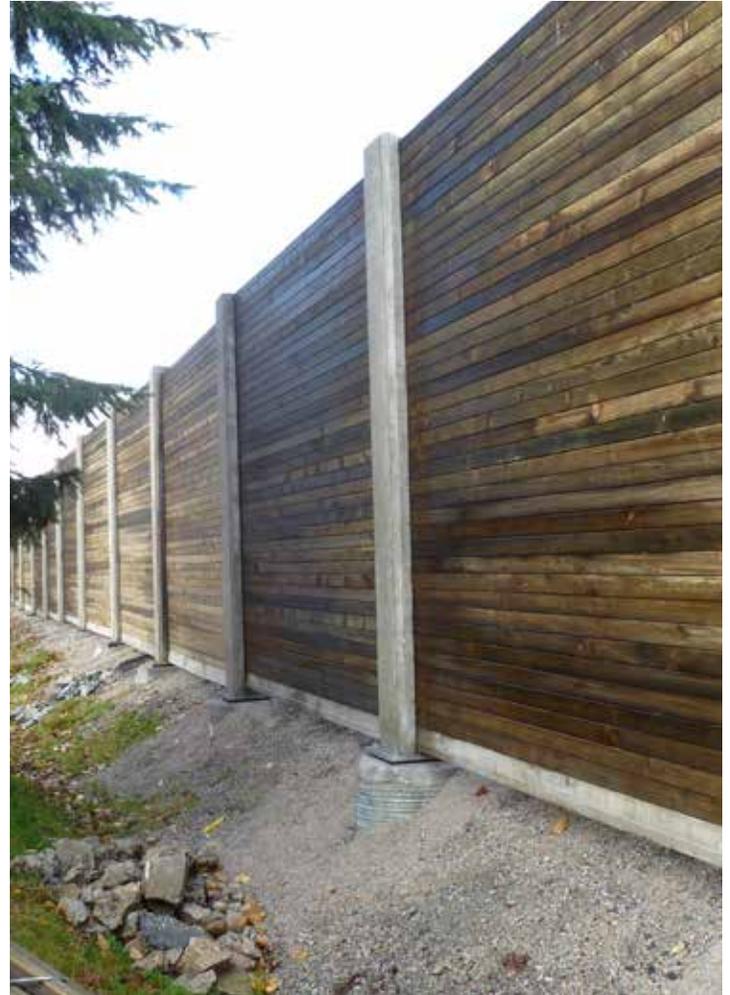
**CHOICE** Wood provides a tangible connection to nature that is unmatched by other building materials, and offers an aesthetic appeal for both local residents and those travelling on the highway. When asked, 11 of 13 residents near the Alex Fraser Bridge perimeter road barrier chose the wood option.

### **LOWER ENVIRONMENTAL**

**IMPACT** – Wood is a natural choice for sustainable building construction; it has a lower energy and carbon footprint than most other products. The wood-concrete hybrid barriers save about one tonne of carbon for every five metres installed.

### **UNDERUTILIZED SPECIES**

– The Lower Mainland projects used hem-fir, an underutilized species that is a combination of British Columbia coastal hemlock and amabilis fir. Western Forest Products, which supplied the wood for the barriers, is exploring other ways to use hem-fir in custom products for export markets.



Top and bottom left photos courtesy of FPIInnovations  
Bottom right photo courtesy of Ministry of Transportation and Infrastructure

## FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia's market development agency for forest products.

For more examples of innovative wood building projects throughout British Columbia, visit:

[naturallywood.com](http://naturallywood.com)