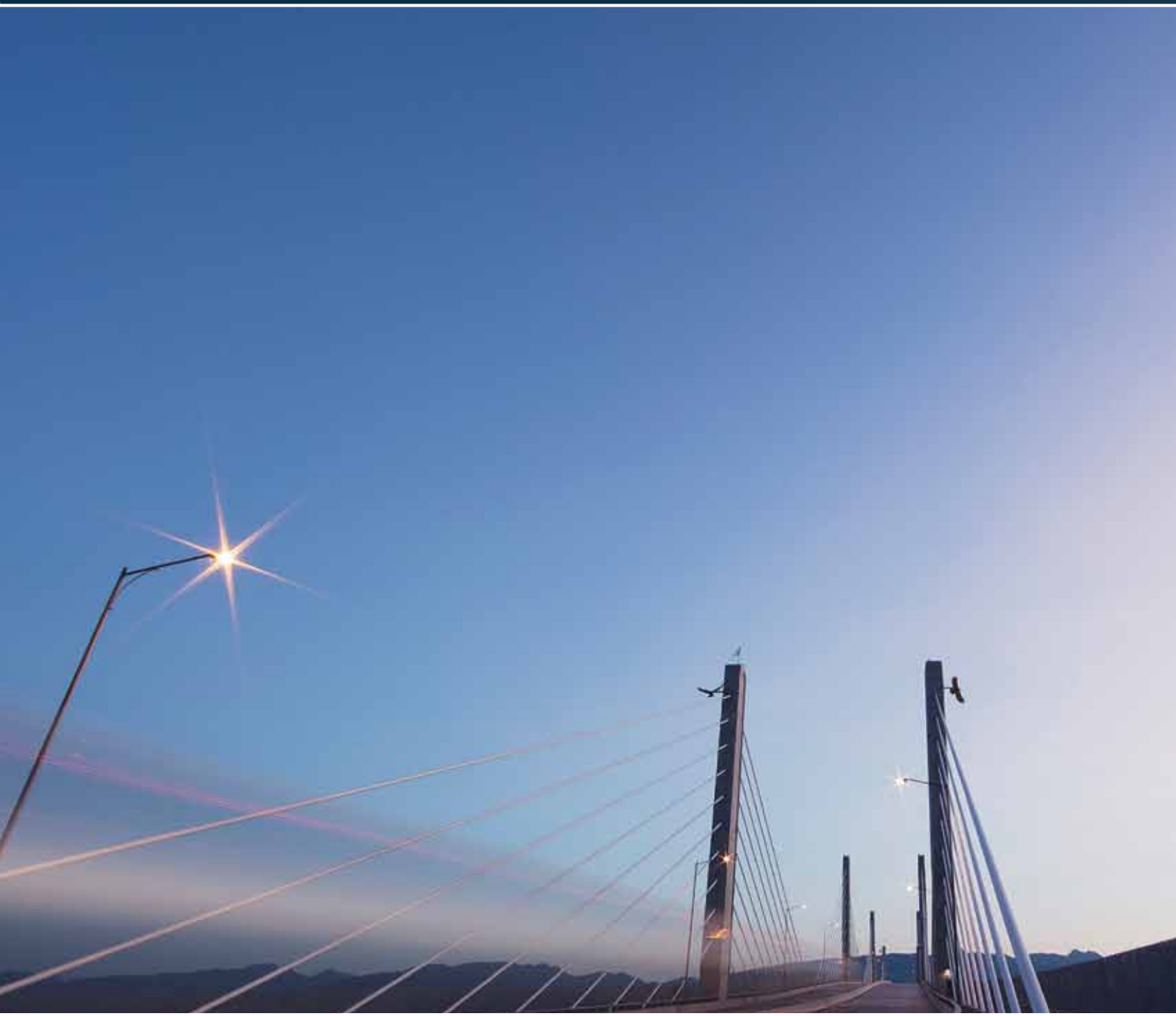
OCTOBER 2009

# SITELINES

Landscape Architecture in British Columbia



## TRANSPORTATION

**Canada Line Opening | Road Rights of Way Receives ASLA Award | Vancouver Green Streets | Multi-modal Pathway Design**

NEWSITES

# Ruskin Dam Bioengineering

By Tenille Ziegenhagel, BCSLA Intern and Catherine Berris, BCSLA, MCIP, FCSLA

**Most of Catherine Berris and Associates' (CBA) past bioengineering projects have either been hidden away, buried deep within riparian protection areas, or seen only from a distance, in the case of the slope near Cleveland Dam in the District of North Vancouver.**

The firm's most recent project is neither; it is highly visible from an adjacent public road. The site is Ruskin Dam in Mission, a BC Hydro project undertaken to address seismic deficiencies of the dam's right abutment. The construction includes the realignment of Wilson Street to create space for future construction work, and required a large excavation above the road. The slope is the focal point of the view from the dam, which is a recreational corridor.

CBA was contracted to provide a restoration plan for the cut slope, which consists of a 1.75:1 slope of approximately 6,300m$^2$. The site is near Hayward Lake — a source of drinking water for the District of Mission — and the Stave River, therefore control of erosion and minimizing surface runoff were critical.

The plan uses bioengineering (the use of live dormant cuttings for site engineering and landscape construction) to stabilize the slope and to provide homes for native trees and shrubs. The plan included over 300 wattle fences (small retaining structures made of woven live cuttings), with live pole drains in seepage areas. The trees and shrubs were selected to blend with the surroundings, tolerate the exposure, resist the temptations of deer, promote biodiversity, and to serve as a pioneer ecosystem. Species included: Alnus rubra (Red Alder), Acer macrophyllum (Bigleaf Maple), Pseudotsuga menziesii (Douglas-fir), Symphoricarpus albus (Snowberry), Amelanchier alnifolia (Saskatoon), and Rubus spectabilis (Salmonberry).

Environmental restoration efforts included the installation of over 300 wattles (for colour images visit www.sitelines.org) *Credit:* Catherine Berris and Associates

Due to the summer timing of construction, a separate contract to harvest and store 40,000m of live cuttings, mostly Scouler's Willow (Salix scouleriana), was arranged for late winter. The specifications called for the cuttings to be harvested in drier locations to match the site conditions. A Denbow Terraseeded mixture was applied, with fibrous content, to reduce the potential for erosion and a temporary irrigation system was installed for establishment.

The wattles sprouted almost as soon as they were placed and most of the plants are establishing well. Two months after installation at 1m tall, the Alders are now over 2m high. One of the most interesting aspects of the project has been all the people passing by asking the contractors how they can do this on their own properties. SL