

A combined effort in talent: Trow's Building Science, Materials Testing and Geotechnical Divisions partnering on projects at VGH including the Energy Centre, (above) Gordon and Leslie Diamond Health Care Centre and the Radiation Therapy Annex.



TROW ASSOCIATES OFFERS A FULL SLATE OF ENGINEERING SERVICES TO ALL ITS CLIENTS

SINCE IT WAS FOUNDED IN 1957, Trow Associates Inc. has grown into one of Canada's leading consulting engineering firms. Its 1,200-strong staff works on infrastructure projects across Canada and offer services in geotechnical, materials, environmental, building sciences and quality management. Trow's B.C. head office is in Burnaby; regional offices are in Kelowna, Kamloops and Victoria.

In 2000, Trow moved into B.C. primarily through the acquisition of local firms Macleod Geotechnical Ltd. and Terra Engineering Ltd. Since then, Trow has landed a piece of almost every major civil project in B.C. Its hands-off approach to managing the divisions and branches and its willingness to work on joint venture and design-build proj-

ects with other local consulting giants has led to Trow being recognized as one of Canada's 50 Best Managed Companies.

Trow's management team leads this spirit of partnership, particularly when acquiring new companies. "It takes time to go through the integration as key people from the firms meet to decide if it's a good fit," says Sasha Milovic, B.C. regional manager. "We take time to ensure there will be alignment with the strategic direction that Trow has set out, and that there are synergistic benefits to be gained by all parties.

"We look to acquire companies that are established, profitable and successful, so it's important during the integration that the companies joining us maintain their dignity and independence. The more we grow, the >

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more we can offer, and by having the resources to take on diverse and interesting projects we become more attractive to potential employees," says Milovic.

In B.C., Trow operates five divisions: Geotechnical, Materials, Environmental and Building Sciences, which are united through ISO 9001 certification and its fifth division, Quality Management, which forms an integral part of the branch's daily activities.

Trow has extensive experience in every aspect of geotechnical engineering and has been recognized twice for its work on the Sea-to-Sky Highway. The Golden Ears Bridge is its largest B.C. project ever, with about 100,000 hours of work for concrete, soils and asphalt quality assurance. The foundations for the main bridge are cast-in-place concrete piles measuring 2.5 metres in diameter and 75 metres in depth. The site also features eight-metre-high embankment fills using a variety of lightweight fill materials to limit post-construction settlement.

Trow consistently uses a combination of ingenuity and expertise to overcome obsta-

cles, such as the significant challenges inherent in the peat bogs at the Glenlyon Business Park in the Big Bend area of Burnaby. Canada Lands Company (CLC) started developing the site in 1989. This peat bog is highly variable and peat thickness can be up to 25-feet deep. The peat sits atop another 25 to 200 feet of soft organic soil, so driving piles would have made the cost of developing the land prohibitive. Instead, Trow opted to use slab-on-grade construction as an economic option.

Preloading is commonly used in the Lower Mainland to induce settlement in the subsurface before construction starts. It has to be executed carefully: filling the site too fast can cause ground stability issues or flooding of adjacent areas. "When you place preload over peat, the soil settles almost as much as the height of the preload that was added," says Larry Morgan, development manager for the B.C. region of CLC.

"There are areas on this site where we have five metres of height, but in reality we've placed about 12 metres of fill. Some areas have had preload in place for eight years and

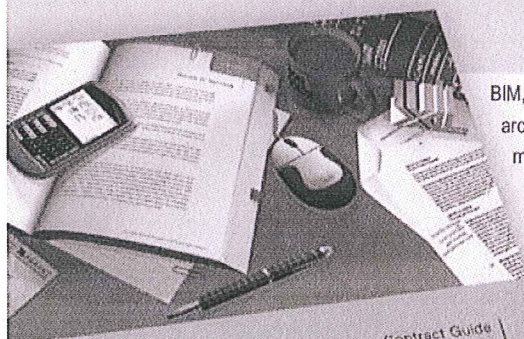
have settled up to seven metres. In most cases the loading conditions we need are met in about two." Trow has directed the placement of about 2.5 million cubic metres of fill since 1989. When the project is complete (around 2017), about two million square feet of space will have been developed over 150 acres.

"We started out with the understanding that we were in it for the long haul so we've spent lots of time on monitoring and surveying; the engineering bill for the ground improvement has been in the millions but it's paid off," says Morgan.

"In almost 20 years we have not had any post-construction settlement issues. The professionalism and timely client support that Trow has given us, and their understanding of what is needed to build here has been instrumental in the long-term development of the Glenlyon Business Park. There wouldn't be a business park here without them."

Trow is also working on the Whistler Blackcomb Peak to Peak Gondola that will span a total of 4.4 kilometres – three kilometres of which is an unsupported span. When

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complete, it will be the world's longest gondola span with the highest distance above the valley floor at over 400 metres.

Trow works on projects that are firmly rooted on the ground, too. Its Building Science Division offers building envelope design and project management for new and existing structures, including leaky condos. In association with Bunting Coady Architects (BCA), Trow has worked on about 15 buildings, most recently the award-winning Kwantlen University College Trades and Technology Centre in Cloverdale.

"We design buildings that are functional, energy efficient and practical to build," says Teresa Coady, CEO of BCA. "Trow has provided us with building envelope design for five years and with geotechnical services for 10 years."

Trow's Materials Division was also involved in the Kwantlen project and the company is working hard to offer the services of the three divisions on future buildings. "We specialize in LEED® accredited high-performance buildings and we've never had an insurance liability



Foundation design and concrete testing performed by Trow for the Golden Ears Bridge.

claim against us," says Coady. "Therefore, we always use firms that are willing to go that extra mile. I think that Trow is unique in the range of services they can offer."

BCA approaches building design by advising its clients to pay for an exhaustive geotechnical investigation on a grid pattern over the entire site first, then it designs buildings in consultation with the geotechs.

"We design the building to place the highest mass loads where the bearing capac-

ity is the best," says Coady. "If the structure costs are about 30 per cent of the building, and we can save the owner five to 10 per cent on the foundations, the savings can be considerable. We also use the information to decide if there is potential for geothermal infrastructure." Using the geotechnical information to aid the design of the building can cost a bit more up front, but "this process allows us to actively incorporate information into the design process. We can then create

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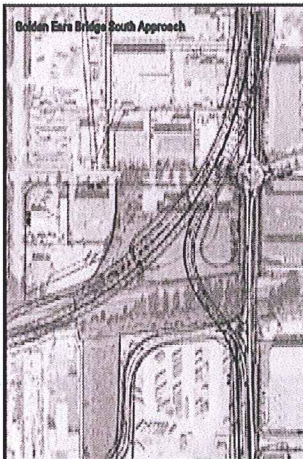


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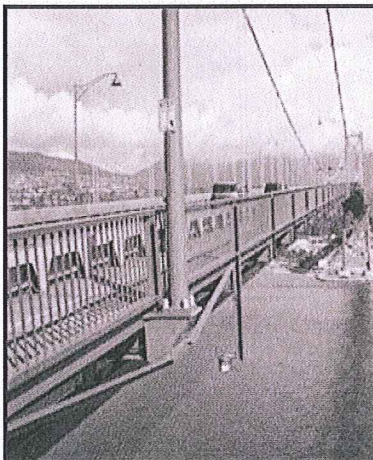
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buildings that are stronger, safer and less expensive to build," says Coady.

Trow is working to ensure that sites are safer, too. Since its inception in 2004, the Environmental Division has assessed and remediated contaminated sites and has diversified into ecological engineering, habitat assessment and construction effects mitigation. Recent assignments include preparation of environmental management plans for large infrastructure projects such as the William R. Bennett Bridge in Kelowna and the 156 Street/Highway 1 Underpass in Surrey.

Trow has also landed a three-year contract as senior environmental monitor on the Golden Ears Bridge project. The Geotechnical Division prepares drainage, erosion and sediment control plans for construction sites, advises on waste management issues and designs storm water quality programs and ecological slope restorations. Another project involves the ecological closure of an industrial landfill on Vancouver Island. Trow is working toward offering bioengineering applications in the near future.

The flexibility shown at the top levels of the firm works its way down to the individual employees who are encouraged to take on as much responsibility as they want, and work flexible hours to achieve a work/life balance. "We recognize that we have to have drivers, pushers, doers and people who will work on our business development. We help our employees manage their weaknesses and capitalize on their strengths," says Milovic.

Trow is employee owned; approximately 17 per cent of the employees own shares, and the company expects to continue to grow from 20 to 25 per cent a year, both organically and through acquisitions. With a strong commitment to sensible growth, a focus on sound project management, happy staff and continued profitability, Trow is already meeting its goal of becoming a one-stop engineering shop to all its clients. ■

This promotional feature was prepared for Trow Associates Inc. by BCBusiness magazine's Special Advertising Features Dept. Writer: Tonia Jurbin. For information contact BCBusiness VP of corporate features John Cochrane at 604-299-7311. Email: jcochrane@canadawide.com