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Metro Vancouver Area Consulting Engineers Shine at National Awards Gala Claim top awards for local, national, and international projects

(OTTAWA) October 24, 2017 – From the construction of essential transportation infrastructure and water supply delivery, to improving energy efficiency and road safety, consulting engineers from across the Metro Vancouver area were celebrated for these outstanding achievements Tuesday night in Ottawa at the 2017 Canadian Consulting Engineering (CCE) Awards gala. Recognized as the industry's highest honours, the awards are presented to projects by Canadian firms that showcase the most remarkable engineering feats.

“These awards not only provide the opportunity to recognize the valuable contributions that consulting engineers make to our local communities, they showcase these outstanding achievements on a national stage,” said ACEC President and CEO John Gamble. “They bring focus to the important role that these projects, and consulting engineers in general, have on the social, economic and environmental quality of life of all Canadians.”

Well deserved awards are presented in a variety of categories, ranging from buildings and transportation, water and natural resources, to special projects and community outreach. Firms from across the metro area took home ten of the twenty **Awards of Excellence** from within these categories, with four projects being honoured with additional **Special Achievement Awards**.

The most prestigious Special Achievement Award, **the Schreyer Award**, is presented to a project that best demonstrates technical excellence and innovation; only projects that display the highest degree of technical merit are rewarded. This year's Schreyer recipient was **Ausenco Engineering Canada Inc.** for their *Port Mann Water Supply Tunnel* project. Located beneath the Fraser River from Coquitlam to Surrey, this tunnel replaced Metro Vancouver's existing Port Mann water main crossing in order to address seismic and scour issues and to meet future potable water demand.



Ausenco's team designed a deep tunnel, access shafts, valve chambers, and pipe mains to replace the crossing, and introduced many industry firsts which included addressing the highest water pressure encountered in Canadian soft ground tunnelling, unreinforced ground support walls for the shafts, and a concrete shaft designed to yield and significantly deform during an earthquake yet maintain functionality.

Unique analysis and designs were required to overcome the challenges presented by the soft, wet, liquefiable soils surrounding the River. As the tunnel crossed beneath an active rail yard and exited into a public park, even addressing the challenges posed by this location demanded innovative design; the rail yard operation could not be disrupted, and the tunnel was to be invisible to park users on completion.

“We are honoured to receive this award, which recognizes the innovation and technical ingenuity of the team working on this very challenging project,” said Bob Zunti, Ausenco's Senior Vice President Western

Canada. “A number of design ‘firsts’ in Canada were employed, again showcasing the exceptional skill of our team members.” This project more than doubles the capacity of the old water main and provides enhanced earthquake and river erosion resiliency to help ensure the continued delivery of drinking water to Metro Vancouver residents.

For their *Box Canyon Hydroelectric Project* in Howe Sound, BC, **Knight Piésold Ltd.** won the **Tree for Life**



Award, presented to a project that best demonstrates outstanding environmental stewardship. In addition to distinguishing itself by its commitment to the environment the 16 MW Box Canyon Hydroelectric Project may have the most hydraulically complex design of any run-of-river hydroelectric project in North America, if not the world. Knight Piésold Ltd. assisted Box Canyon Hydro Corp. (a subsidiary of Elemental Energy Inc.) from concept development to operational monitoring.

“It is an honour to be recognized for our work on the Box Canyon Hydroelectric Project, in partnership with Elemental Energy, Squamish Nation, Chant Group, and Jacob Bros Construction,” said Sam Mottram, Managing Principal, Power Services, Knight Piésold Ltd. The project is located within the traditional territory of the Squamish Nation who were integral through all phases of the project, including development, working to identify and address traditional land-use, and environmental issues.

The project was successfully completed under BC Hydro’s Clean Power Call. It contributes to the province’s robust renewable energy sector, bringing it closer to their Clean Energy Act commitment of being electricity self-sufficient. The project provides reliable, renewable energy for the BC electrical grid. It is an important local electrical generation centre that will serve the Sunshine Coast and Lower Mainland for the next 60 to 75 years. Sam Mottram, Managing Principal, Power Services, Knight Piésold Ltd. confirmed “this project will provide clean renewable power for generations.”

The **Ambassador Award**, presented to projects constructed or executed outside of Canada that best showcase Canadian engineering expertise, was awarded to two projects, both from within the Transportation category. The co-recipients were **McElhanney Consulting Services Ltd.** for *The Atal Setu Bridge* in Basohli, Punjab and Jammu & Kashmir, India and **COWI North America (formerly Buckland & Taylor)** for *The World Trade Center Transportation Hub (Oculus)* in New York, NY.

The much-anticipated *Atal Setu Bridge* connects three states in Northern India. It joins isolated communities and drastically reduces travel time for locals and emergency response teams. To complete the project



rapidly, the Indian Ministry of Defence procured the bridge under a design-build scheme, the first for a cable-stayed bridge in India. Working for contractor SP Singla, McElhanney was the prime consultant, responsible for the design, construction engineering, and site support. The team faced an aggressive 6-month design schedule compared to the 9 to 12-months usually allocated for similar projects, however, they delivered the bridge,

described by locals as an ‘engineering marvel’, in record time. This award “is of momentous value to us as it recognizes engineering excellence. The honor merits technical innovation, the importance of constructability, sustainability, and reduced environmental impact in design. [It] recognizes McElhanney’s extraordinary efforts in designing and constructing the first design-build cable-stayed bridge

in Northern India in record time,” said Raj Singh, Market Sector Lead, Bridges, McElhanney Consulting Services Ltd.

The World Trade Center Transportation Hub (Oculus) project by **COWI North America (formerly Buckland & Taylor)** pushes the boundaries of structural engineering and is striking in its



architecture, yet was extremely complicated to build. As erection engineers, B&T (COWI) worked closely with Skanska (the Contractor) and the Port Authority of New York & New Jersey, (the Owner), and the design team, to introduce innovative applications that improved the erection schedule.

A free cantilever segmental erection scheme allowed for a significant reduction in falsework and provided opportunities for geometry adjustments where needed. Applying bridge engineering concepts and first principles allowed this complex structure to be constructed safely and accurately. The Oculus is an example of the successful application of a traditional bridge erection engineering technique as an innovative solution in building construction. “At COWI, we are proud to be part of this important project. It is a testament to the resilient commuters and citizens of New York. We are honored to have been able to contribute our expertise to this inspiring structure,” said Senior Vice President Darryl Matson, COWI North America.

COWI North America’s second Award of Excellence winning project, the *Abraham Lincoln Bridge*, was designed to improve connectivity between two states and alleviate traffic on the existing JFK Bridge. The new Abraham Lincoln Bridge crosses the Ohio River connecting downtown Louisville, Kentucky with Jefferson, Indiana. This landmark project was a collaborative effort between the owner



(Kentucky Transportation Cabinet), the contractor (Walsh Construction), the designer (Jacobs Engineering Group), and subconsultant COWI North America. As the engineer of record, COWI designed this cable-stayed bridge under unique geotechnical conditions using an innovative foundation system with an inherently flexible three-tower cable-stayed system. They employed state-of-the-art probabilistic design to achieve the project’s sustainability requirement of 100-year service life, and completed the

project under an aggressive design and construction timeline, “it was an honor to be entrusted with the main span design on an accelerated schedule,” said Vice President John Brestin, COWI North America. “At COWI, we are proud to have been part of the Abraham Lincoln Bridge project. True team collaboration was the key to the project's success.”

An **Award of Excellence** was presented to **Kerr Wood Leidal Associates Ltd.** for their *Central at Garden City District Energy System Mini-Plant*. The City of Richmond retained



KWL to design and administer construction of the Phase 4 expansion of the Alexandra District Energy Utility (ADEU), the largest ambient heating and cooling district energy system in North America. The overall goal of the system is to reduce the City of Richmond’s carbon footprint. Phase 4 was developed to meet the unique needs of the Central at Garden City shopping mall, while also integrating with the main ADEU system,

which is based on geoexchange technology. Since retail buildings require significantly larger cooling and less heating capacity than surrounding residential buildings, the KWL team designed a ‘mini-plant’ to satisfy these load conditions while remaining within cost-of-service targets

This project decreases greenhouse gas emissions by reducing natural gas use by up to 70% compared to conventional alternatives. Over the project's estimated 25-year lifecycle, the equivalent of green house gas emissions from 4,000 passenger vehicles will have been eliminated. "We are honoured to receive the Award of Excellence for the Central at Garden City District Energy Mini-Plant. This award reflects KWL's and the City of Richmond's commitment to delivering innovative and sustainable infrastructure projects," said Mike Homenuke, P.Eng., Sector Leader, Utility Management, Kerr Wood Leidal Associates Ltd.



Klohn Crippen Berger Ltd. was presented with an **Award of Excellence** for their *Mayerthorpe Rail Bridge Replacement* project. Following the unfortunate loss of the trestle deck bridge to fire on April 16 2016, CN Engineering retained Klohn Crippen Berger to complete a site investigation, design, and supervise construction of the 335 m long Mayerthorpe timber rail bridge. CN's goal was to restore service to Whitecourt and beyond within 3 weeks, a very compressed timeline for both design and construction.

Consequently, it was key to consider the performance of the foundation in response to construction and modify the design as construction progressed. Klohn Crippen Berger worked with CN Engineering and other contractors to achieve the aggressive timeline and manage the substantial risks associated with the execution of this type of project. In the end, the team restored rail service in 20 days. "This re-established the rail services for local communities and businesses, and the resource industry, which were affected by the loss of the rail line," said Brian Rogers, M.Sc., P.Eng. Vice President Alberta Klohn Crippen Berger. For their efforts and well deserved success, they are "proud to accept this 2017 Canadian Consulting Engineering award."

For their *Wildlife Detection System* project designed to protect wildlife and improve vehicular safety, **PBX Engineering Ltd.** received an **Award of Excellence**. Each year, thousands of collisions



with wildlife are reported on BC highways; to address this issue, the Ministry of Transportation and Infrastructure retained PBX Engineering to plan, design, and commission a Wildlife Detection System to be implemented on two priority corridors on Highway 3. Drawing on their extensive experience in transportation technology and security systems, the PBX Engineering team developed sophisticated detection technologies integrated with dynamic message signs. They developed a rigorous and systematic testing methodology and applied it effectively to verify the system's accuracy and sustainability. This enabled the system to continuously and autonomously operate without ongoing monitoring, testing and re-calibration. As a result, the system is able to operate at an accuracy of around 97%.

This highly-accurate and effective system applies locally developed technology and engineering expertise to provide the area's wildlife with greater protection, and motorists within the corridors a safer commute. "Having our project recognized by ACEC and CCE magazine makes us immensely proud. The Award of Excellence is a testament to the entire project team's hard work, innovation, and dedication. It is an honor to be recognized among so many other worthy projects," said Ian Steele P.Eng., President, PBX Engineering Ltd.

SNC-Lavalin Inc. won two **Awards of Excellence**, for the *Jimmie Creek Hydroelectric Project*, and for the *Evergreen Line Rapid Transit Project*. The former is a run-of-river development located in the Toba Valley within the traditional territory of the Klahoose First Nation. The facility is connected to an existing 230 kV transmission line which runs from Toba Valley to the BC Hydro Transmission system at



Saltery Bay. An EPCM project, Jimmie Creek provides clean energy to local communities with minimized environmental impact. Working in close collaboration with Alterra Power Corp., the project was completed ahead of schedule and under budget, with a safety track record of over 748,000 hours performed with zero Lost Time Injuries. The project now produces up to 159,000 MWh of renewable energy to the grid annually, providing power to approximately 14,500 homes. “We are very proud of our work on the Jimmie Creek Hydroelectric Project and we are happy to see it recognized by the Association of Consulting Engineering Companies Canada and CCE,” said Francois Vitez, Vice-President, Hydro, SNC-Lavalin Inc.

SNC-Lavalin Inc.’s second **Award of Excellence** was for a rail milestone for Canada, the *Evergreen Line Rapid Transit Project* in Metro Vancouver. At 11 km long it makes the SkyTrain the longest driverless system in the world. SNC-Lavalin was responsible for the design, build, and partial financing of the project. They used a variety of innovative techniques to build 5 km of elevated guideway, 4 km of at-grade



guideway, and a 2 km bored tunnel to deliver a complex transit infrastructure project in an urban area. The project benefitted from close collaboration with First Nations groups, whose artwork is featured throughout the six new stations. “We are honoured to receive this acknowledgement from ACEC and CCE Magazine for the Evergreen Line Rapid Transit Project,” said John Wilkinson, Executive Vice-President, Infrastructure Construction, SNC-Lavalin. In addition to its transportation benefits, the

Evergreen Line project also enabled the construction of over 13,000 m²(a) of increased productive riparian and aquatic habitat. “To us, the Evergreen Line Project is more than tracks and trains. It’s about improving the lives of people and their communities. We are proud to have been part of this project and I want to thank everyone involved that made it a success.”

In November, follow the [#20DaysOfExcellence](#) in engineering campaign on Twitter and at www.acec.ca/20daysofexcellence to watch videos of other award-winning projects like these and to learn more about the impact of consulting engineering on our quality of life.

About award-winning firms

Ausenco Engineering Canada Inc is a global diversified engineering, construction and project management company providing services in the Minerals & Metals, Oil & Gas and Industrial sectors. They deliver new and better ways to add value to their clients’ projects and deliver results in some of the world’s most challenging environments. www.ausenco.com

COWI North America is a leading bridge, tunnel and marine engineering consulting group built on over 80 years of international experience. With 11 offices across North America, we provide innovative and sustainable solutions that shape the way people and commerce move; whether it be a bridge or tunnel connecting communities or marine terminals connecting the world. www.cowi-na.com

Kerr Wood Leidal Associates Ltd. (KWL) is a Canadian consulting engineering firm specializing in water infrastructure. Services include infrastructure planning, modelling, design, and construction management.

KWL has won many provincial and national engineering awards for a diverse range of projects, including wastewater infrastructure planning, pump stations, water treatment plants, stormwater management, and creek hazard mitigation works. www.kwl.ca

Klohn Crippen Berger (KCB) is an award-winning engineering, geoscience and environmental consulting firm delivering professional and practical technical solutions. Formed in 1951, KCB has a strong culture of quality, health and safety, community engagement and ethics, and over 65 years of developing sustainable solutions for clients in the energy, hydropower, infrastructure, mining and transportation sectors. www.klohn.com

Knight Piésold Ltd. specializes in the identification, concept development, environmental assessment, permitting, detailed design, and commissioning of hydroelectric and other renewable energy projects around the world. Founded in 1921, Knight Piésold is a global consulting firm providing engineering, environmental, geoscience, and management and testing services for the mining, power, water resources, infrastructure, and oil and gas industries. www.knightpiesold.com

McElhanney Consulting Services Ltd. is an employee-owned firm specializing in integrated services to meet clients' needs, including engineering, surveying, mapping, planning, environmental consulting, landscape architecture, and more. Established in 1910, McElhanney has built its reputation as a trusted and experienced consulting firm with longstanding local client and community relationships. Over 1,000 staff work together to meet clients' needs from 30 offices across Western Canada. www.mcelhanney.com

PBX Engineering Ltd. is a professional consulting firm specializing in electrical and systems engineering. Since 1996, PBX has designed and managed infrastructure projects across North America in the following core service areas: Transportation, Industrial, Power, Security, Lighting, Marine, Municipal, Alternative Energy, Automation & Control, Buildings, and Communications. www.pbxeng.com

SNC-Lavalin Inc., founded in 1911, SNC-Lavalin is one of the leading engineering and construction groups in the world and a major player in the ownership of infrastructure. From offices in over 50 countries, SNC-Lavalin's employees are proud to build what matters. Their teams provide engineering, procurement, construction, completions and commissioning services together with a range of sustaining capital services to clients in their four industry sectors: oil and gas, mining and metallurgy, infrastructure and power. SNC-Lavalin can also combine these services with its financing and operations and maintenance capabilities to provide complete end-to-end project solutions. www.snclavalin.com

About Awards co-sponsors

ACEC represents companies in Canada that provide professional engineering services to both public and private sector clients. These services include the planning, design and execution of all types of engineering projects, as well as providing independent advice and expertise in a wide range of engineering and engineering-related fields. For more information about ACEC and the 2017 Canadian Consulting Engineering Awards, please visit www.acec.ca.

Canadian Consulting Engineer is a bi-monthly magazine for engineers in the construction industry. It is a division of Annex Publishing & Printing Inc. The award-winning projects are described in full in the October-November 2017 issue of *Canadian Consulting Engineer* at <http://www.canadianconsultingengineer.com/digital-edition/>.

Multimedia (includes project description, video, photo)

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[COWI North America project photo](#)
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For more information, please contact:

Christina Locmelis, Communications & Marketing Specialist
Association of Consulting Engineering Companies-Canada
clocmelis@acec.ca
613-236-0569

Doug Picklyk, Editor
Canadian Consulting Engineer
dpicklyk@ccemag.com
416-510-5119

Kate Stephens
Ausenco Engineering Canada Inc.
kate.stephens@ausenco.com
604-684-9311

Hilary Pritchett
COWI North America (formerly
Buckland & Taylor)
hlpr@cowi.com
604-986-1222

Mark S. Blamey
Kerr Wood Leidal Associates Ltd.
mblamey@kwl.ca
604-293-3200

Hartley Facultad
Klohn Crippen Berger Ltd.
hfacultad@klohn.com
604-251-8477

Maricar Payot,
Knight Piésold Ltd.

Michelle Grady
McElhanney Consulting Services Ltd.

mpayot@knightpiesold.com
604-685-0543

Ian Steele
PBX Engineering Ltd.
ian.steele@pbxeng.com
604-408-7222

Katherine Ward
SNC-Lavalin Inc. (Jimmie Creek Hydroelectric Project)
katherine.ward@snclavalin.com
905-301-0707

mgrady@mcelhanney.com
604-424-4750

Louis-Antoine Paquin
SNC-Lavalin Inc. (Evergreen Line Rapid
Transit Project)
Louis-Antoine.Paquin@snclavalin.com
514-393-8000 x54771