**PRESIDENT’S MESSAGE**

Every year, the consulting engineering community comes together to recognize the innovation, ingenuity and engineering skills of the 9,000 British Columbians who work for members of ACEC-BC.

The Association of Consulting Engineering Companies of BC (ACEC-BC) is proud to recognize those projects that have made significant contributions to improving our environment in many different areas. ACEC-BC recognizes excellence in five different categories:

- **Buildings**
- **Municipal & Civil Infrastructure**
- **Transportation & Bridges**
- **Energy & Industry**
- **Soft Engineering**

ACEC-BC also recognizes the outstanding contributions of three individuals. The Meritorious Achievement Award is presented annually to an individual for significant lifetime contributions to engineering, the industry and the community. The 2016 Meritorious Achievement Award is presented to Kerry Buid of Associated Engineering. Kerry has promoted continuing professional development (CPD), corporate social responsibility and sustainable business management. Throughout his career, Kerry has actively given back to our profession, volunteering with a number of professional and community organizations in various roles.

The Young Professional Consulting Engineer Award recognizes young consulting engineers for achievements in the first 10 years of their career. The 2016 award is presented to Tijana Smiljanic, P.Eng., of McElhanney Consulting Services Ltd. In addition to her work on large, high-profile assignments, specializing in major transportation design-build and P3 projects, Tijana chaired BC’s Young Professionals’ Group (YPG), 2014-15, where she led the development of a three-year plan to enable the BC YPG to execute initiatives spanning multiple committee terms. Tijana has risen to positions of increasing responsibility, not only because of her technical skills, but also owing to her creativity, strong interpersonal skills and keenness to take on a leadership role within a team.

This year ACEC-BC also presented its second Chair’s Award. The award was established as a means to recognize individuals outside of the consulting engineering community who have exerted an exceptional, positive influence on our industry. It was intended to be an extraordinary award, and not necessarily an annual award. The 2016 recipient is Dan Doyle, P.Eng., an extraordinary individual deserving of this award. Over the last several decades, Dan has had a positive influence on the consulting engineering industry in British Columbia, particularly in his senior roles at the BC Ministry of Transportation and Infrastructure and at the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games.

This year ACEC-BC is pleased to launch the Client of the Year Award, which recognizes the benefits to the community or owner that result from good client relationships, and which aims to promote and encourage best practices by clients. Nominations were based on criteria that included communication and relationship management, appropriate risk assessment management and allocation, use of fair and balanced contracts and appropriate procurement and delivery methodology that leads to clear scope. We are very pleased that the winner of the inaugural Client of the Year Award is the BC Ministry of Transportation and Infrastructure (MoTI). For over 18 years, MoTI has been an exemplary client, setting new standards for procurement, contract fairness, industry engagement, and project partnership and collaboration. They are a model for client best practices.

Keith Sashaw, President & CEO
ACEC-British Columbia

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The ACEC-British Columbia Meritorious Achievement Award recognizes an individual consulting engineer for outstanding contributions to the engineering profession, our industry and the community.

The recipient of this prestigious award in 2016 is Kerry Rudd, P.Eng., C.Eng., FICE, president and CEO of Associated Engineering.

Kerry joined Associated Engineering as a design engineer in 1982. He participated in some of the major infrastructure projects in BC, demonstrating technical excellence and project management skills. He participated in the design and construction of the Coquihalla Highway, Fraser River Flood Control Program, Deltaport container terminal, the new runway at the Vancouver International Airport and the Johnson-Mariner Way Connector in Coquitlam – the BC Ministry of Transportation’s first design-build project.

Kerry took on roles of increasing responsibility from design engineer to project manager and group manager. In 1996, Kerry was promoted to vice-president and general manager of Associated Engineering’s BC operation. In 2005, he was appointed president of the Associated Engineering group of companies, and in 2006, he became CEO.

Throughout his career, Kerry has actively given back to the consulting engineering profession. Kerry sat on the executive committee and board of directors for CEBC (now ACEC-BC) and was president in 1999. Kerry is committed to improving and raising the profile of the consulting engineering industry through ACEC-Canada and ACEC member organizations, not only through his personal efforts, but also by encouraging and supporting Associated Engineering staff involvement. Kerry was the 2013 recipient of the ACEC-Canada Chair’s Award.

The Chair’s Award recognizes an individual outside of the consulting engineering community who has exerted a positive influence on our industry. This year the award is presented to Dan Doyle, P.Eng.

Dan is an exceptional leader. His dedication and support have helped the people of British Columbia and the engineering community for several decades and in many different capacities. After graduating in civil engineering from UBC, Dan has served as the provincial chair of ACEC-BC’s Young Professionals’ Group and as an ex officio member of the ACEC-BC board of directors. He is currently the BC representative for the ACEC-Canada Young Professionals Network (YPN), a national committee promoting best practices and leadership across Canada.

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The client’s objective for the project was to develop an aquatic centre for the growing community of Grandview Heights in Surrey, BC, that would include a 50-metre competition pool, leisure pool and fitness centre. Fast + Epp responded with what became one of the most ambitious and daring designs the firm has been involved in during its 30-year history. A collaboration with the architects, the design of the superstructure evolved into a gently undulating and metaphorically appropriate wave form that was constructed using a highly unusual structural system – a novel hanging timber catenary roof suspended between concrete buttresses and free-spanning 55 metres (200 feet). Rather than employ conventional steel roof trusses with sizes in the order of 3,000 mm high, 250-mm-high glue-laminated timber ‘cables’ were introduced, reducing the effective structural depth by 90%. This reduces building volumes and energy costs, sequesters carbon and provides the community with an architecturally delightful and warm recreational environment.

The Rendezvous at Whistler Blackcomb – Design of Major Electrical Upgrades

Consultant: Morrison Hershfield

In the summer of 2015, the Rendezvous Lodge, a two-level, wood structure at the top of Blackcomb Mountain, underwent a massive renovation to increase capacity and improve functionality. Morrison Hershfield designed the extensive electrical upgrades for the complete replacement of the commercial kitchen, complex lighting upgrades throughout the facility and upgrades to the main power distribution system to accommodate the new load requirements. Selecting energy-efficient technologies and strategies, such as highly efficient LED lighting, Energy Star appliances and the use of daylight harvesting, was essential in maximizing energy efficiency and in securing energy-saving incentives.

The Rendezvous Lodge renovation was a highly complex project given its remote location combined with the sensitive nature and extent of work being done by many disciplines within tight timelines, requiring exceptional care and co-ordination with the project team.

Interior Heart and Surgical Centre

Consultant: WSP | MMM Group Ltd.

The Interior Heart and Surgical Centre (IHSC) is a $100 million expansion to Kelowna General Hospital comprising four stores with an approximate area of 16,500 square feet. The facility includes 15 operating theatres, in-patient care, a central sterilization and reprocessing department, a cardiac surgical intensive care unit, and support services. WSP | MMM Group Ltd. provided an integrated team that delivered electrical engineering, communications, IT, mechanical engineering, civil engineering, and landscape architecture consulting and sustainability services. The design incorporated many innovative features that complemented the operational aspects of the building while ensuring sustainability remained a primary focus. Energy conservation measures incorporated into the building included heat recovery chillers to preheat domestic hot water, heat recovery coils, “free cooling” capability for air handlers, flue gas heat recovery and lighting energy target at 10% below ASHRAE 90.1-2007. IHSC has been designed and constructed to meet LEED® Gold standards.

Project Managers for the Bike Parkade at King George Station, Surrey

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COWI is a leading consulting group that creates value for customers, people and society through our unique 360° approach. Based on our world-class competencies within engineering, economics and environmental science, we tackle challenges from many vantage points to create coherent solutions for our customers – and thereby sustainable and coherent societies throughout the world.

As of January 1, 2016, Buckland & Taylor, Jenny Engineering Corporation and COWI Marine North America will become COWI in North America. COWI draws on more than 80 years of experience to remain one of the world's leading bridge, tunnel and marine infrastructure consultancy companies.

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OUTSTANDING TOGETHER

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2016 ACEC-BC AWARDS FOR ENGINEERING EXCELLENCE

BUILDINGS

UBC West Mall Electric Baseboard Infrastructure Upgrades Project

Consultant: Morrison Hershfield

When it became evident that several aging buildings not connected to UBC’s new heating system would be needed for the 2015-16 school year, and knowing that the old steam plant would be demolished in Summer 2015, UBC required a fast and economical heating solution for those buildings before the start of the academic year. Electric baseboard heating was selected as the solution for six of the aging buildings. Work involved the replacement of the existing hot water heating with electric baseboards and associated upgrades in six buildings, power upgrades to three additional buildings that would be backfed by a new substation, and the design of the new 1,500-kVA unit substation to feed the nine buildings. Efficiency was maximized through energy modeling, detailed heating calculations for each building and state-of-the-art technology for heating system controls.

Surrey Works Yard and Operations Centre

Consultant: WSP Canada Inc.

The City of Surrey needed to centralize and streamline the operation and maintenance activities of its extensive public spaces, amenities and infrastructure. This was achieved through the renewal of the aging Main Works Yard and Operations Centre. WSP provided structural and building envelope consulting services for this revitalization project, which pushes the boundaries and redefines the esthetics and functionality of a municipal works yard. Its unique design encourages social connections through large gathering areas and interconnecting pathways, provides environmental stewardship with a goal to achieve LEED® Silver certification and completely reinvents the traditional works yard with visually stunning yet functionally pragmatic buildings.

The Main Works Yard and Operations Centre is designed to post-disaster structural standards and optimizes the 7.5-hectare site by condensing operational functions into three main state-of-the-art buildings: the Operations Centre, the North Storage Warehouse and the Fleet Maintenance Building.
We embrace your vision as our own.

We embrace our clients’ vision as our own to help them adapt to a dynamic world. We bring our best thinking and teams to solve your toughest challenges. Find out how we helped transform the Hugh L. Keenleyside Dam for BC Hydro and the Seymour-Capilano Twin Tunnels for Metro Vancouver in this issue of the 2016 ACEC-BC Awards Supplement.

Contact us at hatch.ca.
Drinking water for Lower Mainland communities comes from rain and snowmelt collected by three mountain watersheds. Metro Vancouver is responsible for storing and treating this vital resource and supplying clean, safe drinking water to over 2.4 million residents. Twin tunnels deep beneath Grouse Mountain and Mount Fromme convey water from the Capilano Reservoir to the new Seymour-Capilano Filtration Plant, before being returned to the Capilano system for distribution. The tunnels measure 3.8 m in diameter and 7.1 km in length, with shafts up to 275 m deep. Mined westward using hard rock tunnel boring machines, the tunnels were designed with steel-lined vertical shafts and end sections, and central sections in solid rock or lined with shotcrete.

With sustainability as a core project value, the tunnels were connected to an energy recovery facility to offset energy used to pump water to the filtration plant. With a hydraulic capacity of up to 1,250 ML/day, this feat of deep-rock tunnel engineering is a lasting contribution to the region’s water infrastructure.

**Seymour-Capilano Twin Tunnels Project**

**Consultant: Hatch**

The existing supply system was analyzed and development plans for medium-term water demands. The second work stream (Vieux Fort) had a similar scope to the Dennery system. Options were investigated for the Vieux Fort system to produce a development plan for medium-term demands.

Stantec supported the Government of Saint Lucia in successfully applying for funding from the Caribbean Development Bank for the Vieux Fort system and preparation of tender documents for facilities as a design-build project.

**Vieux Fort and Dennery Water Supply Redevelopment Plans**

**Consultant: Stantec**

Stantec assisted the Government of Saint Lucia in preparing a technically and financially feasible program of works to improve quality and reliability of the Vieux Fort and Dennery water supply systems, with a particular emphasis on the impacts of climate change. Work stream one (Dennery) included the review of the existing water supply base data and the selection of a suitable location for a river intake and development of raw water quality criteria. The existing supply system was analyzed and designs developed for the upgrading of the system for medium-term water demands.

**Awards**

**2016 ACEC-BC Awards for Engineering Excellence**

**Municipal & Civil Infrastructure**

**Award of Merit**

**Seymour-Capilano Twin Tunnels Project**

**Consultant: Hatch**

**City of Whitehorse – Selkirk Pump Station**

**Consultant: Opus DaytonKnight Ltd.**

Selkirk Pump Station is the point of chlorination and entry to the distribution system for Whitehorse’s drinking water, replacing the original station built in 1955. The replacement features a state-of-the-art on-site sodium hypochlorite generation system, three 100 HP booster pumps and a backup generator. The new station controls six groundwater wells via complex automatic well sequencing and staging, complete with SCADA control and monitoring. The station was designed to be energy-efficient and economic, utilizing natural lighting, high-efficiency booster pumps and the highest standards of building insulation.

A backup power generator provides emergency power to the station and two supply wells to maintain the city’s drinking water supply during power failures. Opus DaytonKnight worked with the City of Whitehorse to deliver the project through design, construction and commissioning.

**Transportation & Bridges**

**Award of Excellence**

**World Trade Center Transportation Hub – the Oculus**

**Consultant: COWI North America (formerly Buckland & Taylor)**

COWI North America were the construction engineers for the highly innovative World Trade Center Transportation Hub (also known as the Oculus) in Manhattan, New York. The new transportation hub – which will serve over 200,000 members of the traveling public each day with access to New Jersey PATH trains and 13 subway lines – is dominated by a very high level of architectural detailing. Consequently this made its construction extremely complex.

The contractor, Skanska USA, approached COWI North America, and collectively they determined that a sequential erection scheme was the best way to attain the geometric control needed. This innovative application of a sequential erection scheme – more commonly used in bridge erection than in building erection – meant the project could be completed without extensive falsework. Not only did this save time and money, it also meant that the geometry of the structure could be monitored as it was being constructed. This was crucial due to the intricacy of the design.
Highway 1 Widening – Pritchard to Hoffman’s Bluff Phase 1

Consultant: R.F. Binnie & Associates Ltd.

The project upgraded 2.8 km of existing two-lane highway to a four-lane rural expressway divided highway, with a 100 km/h design speed and an improved alignment. The project included the consolidation of two highway intersections at Stoney Flats Road and Willow Road into one new Protected left-turn intersection, and the design of local roads connecting to the intersection. Extensive environmental improvements were made to Harper Creek that included realignment of the channel and the installation of fish-passable concrete box culverts.

The project team worked closely with numerous stakeholders to address their needs, including the Neskonlith Indian Band, a key partner in the project.

Stewart World Port: Gateway to the North

Consultant: CWA Engineers Inc.

CWA provided planning, detailed engineering and procurement services for the marine terminal structures at Stewart World Port, a multi-purpose, deepwater port facility serving the resource industries in British Columbia, Alberta and the Yukon.

The port is situated at the end of the Portland Canal and the mouth of the Bear River, two km south of Stewart, BC. The placement of the dock in extremely deep water, to avoid the environmental impacts of dredging, along with tidal levels that fluctuate up to 8.2 m, added to the complexity of the design. Innovative construction sequencing, a unique steel pile cap design that allowed for faster on-site fitting and assembly, and procurement of the largest possible prefabricated elements led to optimized field installation.

The port officially opened on time and under budget in September 2015.

Inspiring Sustainable Thinking

Committed to integrating sustainable solutions into our project work and our corporate culture, ISL Engineering and Land Services delivers planning and design solutions for transportation, water and land projects.

ISL is dedicated to working with all levels of government and the private sector to address the challenges that come with growth in urban and rural communities.

Follow us on 

[Image of ISL logo]
Crossing the Great Divide – Trans-Canada Highway Twinning Between BC and Alberta

Consultant: McElhanney Consulting Services Ltd.

Parks Canada is mandated to improve the safety, capacity and tourism potential of long stretches of the Trans-Canada Highway through some of the world’s most rugged terrain. Compounding the challenge, the highway follows alignments originally pioneered by mule trains of the early explorers, with no consideration for present-day vehicles, speeds and safety standards, or for impacts on wildlife and the environment. McElhanney provided comprehensive services to upgrade the highway between the towns of Field (Yoho National Park, BC) and Lake Louise (Banff National Park, Alberta) to a four-lane divided standard, while improving the alignment, safety and amenities. The result is an 85% reduction in wildlife collisions, triple the tourist visits and enhanced protection of the parks.

A stand-out feature of the project is that McElhanney developed customized design standards to satisfy BC and Alberta and national highway standards, as well as the challenges of terrain and weather.

Deltaport Terminal, Roads and Rail Improvement Project (DTRRIP)

Consultant: WSP | MMM Group Ltd.

WSP | MMM Group Ltd. provided structural, highway, and municipal engineering design, and construction inspection services, as an integral member of the Dragados/Jacobs Brothers design-build team delivering the $447 million Deltaport Terminal Road and Rail Improvement Project. As prime consultant responsible for the overall design of the project, WSP | MMM Group Ltd. introduced several design innovations, and two of particular benefit – the first being a raft slab foundation that reduced the need for complex and invasive detour staging. The raft slab eliminated the need for extensive ground improvement at the overpass location, saving months of scheduling time and simplifying the detour strategy. The second innovative technique was the use of an externally bonded fibre-reinforced polymer (FRP) wrap for the columns within the railway yard. The narrow causeway left little room for the new structure between the tracks. The FRP wrap allowed the column cross-section to be reduced while still providing adequate seismic performance.

West Twin Creek Bridge – Foundation Support and Slope Stabilization

Consultant: Thurburn Engineering Ltd.

The West Twin Creek Bridge Project is located about 30 km northwest of McBride, BC, along the Yellowhead Highway 16. The bridge was experiencing movement of the northeast abutment causing stress and distortion of the bridge structure. Data collected showed that the bridge movements were caused by two mechanisms: the abutment fill was moving towards the creek in the downstream and deep-seated movements within the bedrock were occurring towards the creek in the upstream direction.

This composite movement caused longitudinal compression in the bridge, which required the end span bridge girders to be regularly cut at the connection to the abutment. Thurburn was involved in investigating the soil, rock and groundwater conditions and interpreting historical and new geotechnical subsurface instrumentation data.

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Energy & Industry

Award of Excellence

The McLymont Creek Hydroelectric Project – Diverting Water for Hydro Power in BC’s Coastal Mountains

Consultants: Gygax Engineering Associates Ltd. and Northwest Hydraulic Consultants

The McLymont Creek Hydroelectric Project is a 66 MW run-of-river scheme, located in northwestern British Columbia on a tributary of the Iskut River.

The main project components are an intake for diverting a maximum of 30 cubic metres per second of power water from the creek, a 2.8 km-long conveyance tunnel, a powerhouse housing three Francis turbines with a rated capacity of 23.9 MW each, a substation and 9.5 km of transmission line to the Forrest Kerr switchyard. Gygax Engineering Associates (GEA) led the multidisciplinary team that provided the engineering design and construction-phase technical support for this project. GEA’s team also included ACEC-BC members Northwest Hydraulic Consultants and Golder Associates. GEA, together with Northwest Hydraulic Consultants, developed the innovative intake arrangement that addressed the required power flow diversion, flood and sediment passage objectives while accommodating site access constraints. The project was completed on budget overall, with engineering well under budget.

Award of Excellence

The McLymont Creek Hydroelectric Project – Diverting Water for Hydro Power in BC’s Coastal Mountains

Consultants: Gygax Engineering Associates Ltd. and Northwest Hydraulic Consultants

The McLymont Creek Hydroelectric Project is a 66 MW run-of-river scheme, located in northwestern British Columbia on a tributary of the Iskut River.

The main project components are an intake for diverting a maximum of 30 cubic metres per second of power water from the creek, a 2.8 km-long conveyance tunnel, a powerhouse housing three Francis turbines with a rated capacity of 23.9 MW each, a substation and 9.5 km of transmission line to the Forrest Kerr switchyard. Gygax Engineering Associates (GEA) led the multidisciplinary team that provided the engineering design and construction-phase technical support for this project. GEA’s team also included ACEC-BC members Northwest Hydraulic Consultants and Golder Associates. GEA, together with Northwest Hydraulic Consultants, developed the innovative intake arrangement that addressed the required power flow diversion, flood and sediment passage objectives while accommodating site access constraints. The project was completed on budget overall, with engineering well under budget.

Award of Merit

Capilano Energy Recovery Facility

Consultant: Knight Piésoldt Ltd.

The Capilano Energy Recovery Facility is an integral component of Metro Vancouver’s Greater Vancouver Water District Seymour-Capilano Filtration Plant in North Vancouver, BC. Knight Piésoldt designed and commissioned the facility to reduce the pressure of clean drinking water from the Seymour-Capilano Filtration Plant. A hydroelectric turbine recovers energy at the same time water pressure is reduced, partially offsetting energy consumption and operating costs. Two fully redundant 1.676-metre-diameter pressure-reducing valves (energy dissipating valves) provide water supply continuity if the turbine shuts down. The turbine and the pressure-reducing valves discharge into an underground tank to maintain a constant water level supply.

At a total installed electrical generation capacity of 1,687 kilowatts at a design flow rate of 7,500 litres per second, the Capilano Energy Recovery Facility has one of the largest hydroelectric turbines in a treated drinking water system in North America.

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Award of Merit

Fort St. John Micro Hydro Facility

Consultant: Urban Systems Ltd.

Urban Systems was engaged to help identify opportunities for alternative energy production. The option to construct a micro hydro power station on existing effluent streams was identified, and Urban followed with a feasibility study examining potential sites and project plans. Later, Urban provided engineering and project management services on construction and installation of the station and infrastructure upgrades. Urban Systems worked with the city to source funding in order to offset the initial investment and produce the financial plan in order to ensure the project reaches profitability. With upgrades to the penstock for pressure rating allowances and construction of a power station to house a turbine generator, the project now produces enough energy to offset the consumption of 90 homes annually. The electrical output is sold to BC Hydro and represents a source of profit for the city.

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2016 ACEC-BC AWARDS FOR ENGINEERING EXCELLENCE

ENERGY & INDUSTRY

Keenleyside Dam – Spillway Gate Improvements
Consultant: Hatch

BC Hydro engaged Hatch to make improvements to the spillway, structures and associated ancillary equipment of the 48-year-old Hugh L. Keenleyside Dam. This was part of an ambitious plan to upgrade the reliability of spillway systems at BC Hydro’s fleet of dams across the province.

Hatch was involved in every phase of the project from initial planning through to construction and commissioning. Meeting stringent reliability criteria, through the use of modern but proven equipment, Hatch proposed effective design solutions to increase spillway reliability that incorporated robust equipment, redundancy, increased protection and control instrumentation and segregation and separation of critical cabling and components. From the outset, the EPC (turnkey) management style implemented with the contractor, HMI, contributed to tailored solutions resulting in a successful project that was delivered both on time and within budget.

SOFTWARE ENGINEERING

AWARD OF EXCELLENCE

River Training Works in Bangladesh – Protecting the Padma Bridge
Consultant: Northwest Hydraulic Consultants

In Bangladesh, a 6.15-km-long bridge is under construction across the Padma River, the world’s third-largest in terms of flow. Originating in the Nepal Himalayas, the river carries an enormous sediment load, and, through erosion, its highly populated banks can shift a kilometre or more in one monsoon season. Extensive and massive river training works are required to stabilize and guide the more than 10-km-wide channel through the five-km-wide channel at the bridge. The final design includes 12.4 km of erosion protection along the south bank and 1.6 km on the north bank. The design is a significant change from more “aggressive” ones used for bridges that significantly narrow wide rivers in India and Bangladesh, but have very poor performance records. The design also relies on extensive and innovative use of sand-filled geotextile bags (geobags). Northwest worked closely with the project’s environmental, economic and social specialist to ensure that the design met important cultural and sustainability requirements.

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SOFT ENGINEERING

AWARD OF MERIT
Quesnel Lake Observations and Modelling

Consultant: Tetra Tech EBA

Subsequent to an August 4, 2014, failure of the tailings storage facility at the Mount Polley Mine, particulate material entered Quesnel Lake. At the project outset, the potential human and ecological health impacts of the fine-grained suspended material were largely unknown, and there was no information on the fate of coarser material underwater and the area impacted. Tetra Tech performed both field measurements and numerical analyses to develop a predictive model that would evaluate the fate of particulate material in Quesnel Lake and the turbidity resulting from that material.

City of Surrey Copper Wire Replacement Project

Consultant: Aplin & Martin Consultants Ltd.

In 2013, the City of Surrey engaged Aplin & Martin as the lead consultant on a pilot project – the first of its kind in North America – aimed at crime reduction and improved public safety, centered on the elimination of further copper wire theft from the city’s streetlight system and the various resulting detrimental effects. The team was comprised of Aplin & Martin, Crown Contracting and W.K. Williams Consulting and other supporting industry partners to implement a creative and cost-effective solution to meet the city’s simple but challenging objectives. Leveraging the technological advancements in the past two decades and through multiple field tests, the project team developed a business plan to replace the traditional copper streetlight conductor with aluminum alloy conductor citywide. The wire theft activities were entirely eliminated nine months after the implementation started.

Program Management of the Roberts Bank Rail Corridor Program – Success of an Unprecedented Collaboration

Consultant: Collings Johnston Inc.

The Roberts Bank Rail Corridor Program was an unprecedented collaboration of 12 funding partners to deliver nine overpasses and road improvements along this 70-kilometre rail through four municipalities. The program supported trade, while minimizing train impacts to communities and improving safety. Partners included industry as well as all levels of government, and all held a financial stake in the success of the program. As program managers, Collings Johnston Inc. (CJI) oversaw the development and implementation of the program. This included the organization and management of the partnership and the production of the implementation and delivery plans. CJI managed First Nations, public communications and environmental interests at the program level to maintain consistent messaging and approach. This successfully facilitated delivery of the $300 million infrastructure on time and under budget.

Geotechnical Investigation of the Mount Polley Dam Failure

Consultant: Klohn Crippen Berger

On August 4, 2014, the tailings impoundment at Mount Polley Mine breached, resulting in the release of an estimated 17 million cubic metres of water and eight million cubic metres of tailings solids that flowed into Polley Lake, Hazeltine Creek and Quesnel Lake. Klohn Crippen Berger (KCB) was retained by the Ministry of Energy and Mines to support its inquiry into the dam breach. KCB conducted forensic geotechnical investigations to gather the necessary factual data to support the technical assessment of the dam failure mechanism. The results of KCB’s work provided the definitive basis for understanding the geology of the dam site and, ultimately, how the dam failed by sliding on a thin layer of glaciolacustrine clay at a depth of 10 m below the dam. The methods of the investigative studies and determination of the failure mechanism will be an essential reference for the future design of tailings facilities not only in British Columbia, but across Canada and worldwide.

Deep Cove Parking and Access Study

Consultant: WSP | MMM Group Ltd.

Deep Cove is a unique and beautiful place that attracts visitors from around the world. Unfortunately while the number of visitors and special events in Deep Cove continues to increase, its capacity to accommodate those visitors remains unchanged. WSP | MMM Group Ltd. was retained by the District of North Vancouver to address the traffic and parking problems that this waterfront community is experiencing. This was managed through a strategic approach of transportation planning and public participation. The results are included in a report that presents a proposed implementation plan, with budget-level cost estimates, that balances the needs of residents, visitors and businesses. The decision by WSP | MMM Group to use a vehicle equipped with licence plate recognition (LPR) technology allowed the District to select the best parking solution. The LPR technology gathers the desired parking data based on a more complete set of data that is more efficient and cost-effective to collect and process than traditional methods.

Upcoming ACEC-BC Events

WEDNESDAY, APRIL 20, 2016
Leadership Panel
Facilitated by Ralph Kison, KISON Inc.
Venue and guest speakers to be announced

SUNDAY, APRIL 24, 2016
YPG Consultants’ Contraption Charity Event
Guildford Town Centre
10355 - 152 Street, Surrey

MONDAY, APRIL 25, 2016
BC Hydro Mixer
Hilton Vancouver Metrotown
6083 McKay Avenue, Burnaby

TUESDAY, APRIL 26, 2016
Spring Reception in Victoria
Hotel Grand Pacific
463 Belleville Street, Victoria

WEDNESDAY, MAY 11, 2016
ACEC-BC Golf Tournament
Northview Golf & Country Club
6857 - 168th Street, Surrey

WEDNESDAY, MAY 25, 2016
Metro Vancouver Mixer
Hilton Vancouver Metrotown
6083 McKay Avenue, Burnaby

TUESDAY, JUNE 7, 2016
ACEC-BC Annual General Meeting
Coast Plaza Hotel
1763 Cornish Street, Vancouver
Atlin Hydro Power Expansion Pre-feasibility Study  
**Consultant:** Morrison Hershfield

In April 2009 the 2.1-megawatt Atlin Hydro Project began commercial power production. The hydro power facility is owned by Xeti Limited Partnership, which in turn is 100% owned by Taku River Tlingit First Nation (TRTFN). The Atlin Hydroelectric Expansion Pre-feasibility Study was the next step in the TRTFN’s sustainable economic development plan for their community. Morrison Hershfield was their partner in seeking funding, conceptualization and implementation of the study. The proposed six-megawatt hydro expansion further develops the local natural resources of the traditional territory to supply renewable energy to their neighbours in the Yukon. Challenges included an existing hydro power plant that could not be modified, maximizing the production of winter power and creating synthetic flow series from a nearby gauging station in absence of site-specific data.

The study was the first step in thoroughly evaluating the clean, renewable energy project. If successful, the expansion will create a significant First Nation investment opportunity and provide continued opportunities for aboriginal business development.

Sundance Natural Gas to Gasoline Plant Feasibility Study  
**Consultant:** Stantec

The Sundance Plant methanol feasibility study demonstrates how methanol – and its derivatives – is not only a lucrative business, but a green one that benefits the local community. Canadian Methanol Corp. (CMC) desires to build a world-class methanol plant with connections to rail and adjacent liquids pipelines, as well as a marine export terminal, in northern British Columbia. The facilities were designed with environmental and social benefits in mind, with two streams of production. The first would turn natural gas into methanol for export. Second, a portion of this methanol would be refined into a green gasoline using wind power and electrolyzers. Using the results of Stantec’s feasibility study, CMC was able to present a strong business case to prospective investors, strategic partners, government regulators, local stakeholders and politicians.

Organics Management Feasibility Study and Odour Mapping  
**Consultants:** Tetra Tech EBA and Impact Bioenergy

The Regional District of Okanagan-Similkameen (RDOS), through its Solid Waste Management Plan, has committed to maximizing the diversion of organic waste from landfilling or burning through increasing composting. However, the RDOS currently does not have the capacity to compost large quantities of putrescible organics (food waste). Its facilities currently compost yard waste, wood waste and biosolids. Tetra Tech was retained by the RDOS to conduct a feasibility study to assess whether publicly owned waste facilities could be used for organic waste processing, understand cost implications and examine whether odours from these potential facilities would affect residents and businesses. Siting, cost and odour are typically the greatest challenges associated with organic waste management facilities. This study identified ways the RDOS could prevent negative impacts from organic waste management facilities on surrounding areas while creating positive community benefits.
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Supporting UBC’s Geering Up – Promoting Engineering & Science to BC youth

Sunday, April 24
10am to 6pm
Guildford Town Centre, Surrey

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