

Associated Engineering does its part to halt global warming

Climate change, global warming and greenhouse gases are topics that are virtually inescapable today. The growing body of scientific consensus clearly links human activities to climate change. Recognizing the importance of these issues, Associated Engineering is bringing innovation to our corporate practices and the services we provide to our clients by initiating a Carbon Neutral Policy.

Going carbon neutral

Associated Engineering has made a major commitment to help reduce greenhouse gases that cause global warming by establishing a Carbon Neutral Policy. Under this new policy, the company will implement measures to reduce or mitigate greenhouse gas emissions and will invest in carbon offset projects to become carbon neutral.

Associated Engineering has always acted as stewards of the environment, taking a sustainable approach on our projects. This means developing solutions that are environmentally, socially, and economically viable. The carbon neutral policy goes one step further in our commitment to the environment by establishing a goal that as a business we will be carbon neutral.

What does this mean? By using energy for heating and cooling our buildings, lighting our offices, and operating our computers, businesses contribute greenhouse gases, such as carbon dioxide, to the environment. As a responsible business, we believe we can have an efficient and successful business, without increasing the mass of greenhouse gases sent to the environment. Already, the company has implemented measures such as video conferencing to reduce the need for travel, double siding documents to reduce paper use, recycling and reusing paper, transit, and cycling to work, and turning off lights and equipment during non working hours.

As part of the carbon neutral policy, Associated Engineering will identify sources of greenhouse gases from our offices, estimate the carbon dioxide equivalents generation rate, and identify additional measures that will reduce or mitigate greenhouse gas emissions. We will also invest in carbon off-set initiatives as a way to mitigate our greenhouse gas generation impact. We are taking the unique approach of establishing and managing our own carbon offset fund. This will allow the company's management team to assess possible investments to gain assurance the intended carbon offset is achieved. Investments in the communities where our employees live and work will be our top priority, which is directly linked with the company's strategic goal of helping to build better communities.

Controlling greenhouse gas emissions from wastewater treatment

Nitrous oxide is a powerful greenhouse gas that has an assigned global warming potential 310 times that of carbon dioxide. Under certain conditions, biochemical pathways of various microorganisms can generate nitrous oxide in a variety of nitrogen-bearing environments that can include wastewater treatment facility bioreactors, water bodies receiving effluent, and agricultural sites receiving biosolids application.

Associated Engineering's Dr. Dean Shiskowski, P.Eng. has researched and published several articles on nitrous oxide generation in wastewater treatment bioreactors. In recognition of his expertise in this area, Dean will be participating in the Water Environment Research Foundation's Nutrient Removal Challenge to advise on nitrous oxide issues related to achieving low total nitrogen levels in effluent.

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Researchers at NASA's Goddard Institute for Space Studies recently acknowledged Dean's wastewater insights to their study on trace greenhouse gases. Dean has applied his expertise in this area to wastewater projects such as the Capital Regional District's Core Area Wastewater Management Program and the City of Medicine Hat Wastewater Treatment Facility Scoping Study.

Climate change considerations in water system planning

Large regional climate shift is one of the critical metrics, along with ice sheet disintegration/global sea level rise and plant/animal species extinction, that some in the scientific community have associated with climate change. Under certain climate change scenarios, regional climate shifts are anticipated to induce precipitation changes. These changes could include increased drought in sub-tropic areas.

Associated Engineering's Dr. Michael MacLatchy, P.Eng. considered such a scenario in the City of Nanaimo's Water Supply Strategic Plan. To assess the reliability of the watershed under future climate change impacts, he applied the UBC Watershed Model in conjunction with downscaled climate change data obtained from several climate change models and scenarios. The analysis determined the return periods for annual and summer low yields under different climate scenarios, as well as the impact of climate change on duration and distribution of summer yields. The results assisted the City in identifying the potential in-service date for a new reservoir.

Reducing our environmental footprint

By considering how we can reduce greenhouse gases on projects, at work, and at home, we believe that we can all be part of the solution to global warming and halt the effects of climate change.

Saskatchewan operation receives SABEX Award

Congratulations to our Saskatchewan operation on receiving the 2007 Saskatoon and Area Business Excellence (SABEX) Award in the area of Growth and Expansion. In a letter from the Saskatchewan Premier's office, Premier Lorne Calvert stated, "This award is well-earned recognition of your outstanding accomplishments in business and in service to the people of your local and provincial communities... Your commitment to excellence is commendable and serves as an inspiration for us all, and your contribution to the development and strength of our province is significant."

Bert Munro, Vice President and General Manager of our Saskatchewan operation advises, "The company's commitment to being a great place to work and an exciting place to have a career, combined with our staff's positive attitude and dedication to our clients have resulted in our success and our growth. Thank you to all staff!"

Associated Engineering raises over \$15,000 for Canadian Cancer Society

Congratulations and thank you to all Associated Engineering staff for your efforts, support and, above all, generosity to the Canadian Cancer Society Fundraising Campaign. This year, under the leadership of Team Captain, Eric Gaudet, and the Saskatoon Relay for Life Team, we raised \$15,472.88. Associated Engineering was 2007's top fundraising team in Saskatchewan! Great work, everyone!! Hopefully, through these efforts, we can make cancer history.



Eric Gaudet (l) and Caron Seivwright hold award for most money raised by a team

New Schomberg Water Pollution Control Plant will meet stringent phosphorus limits



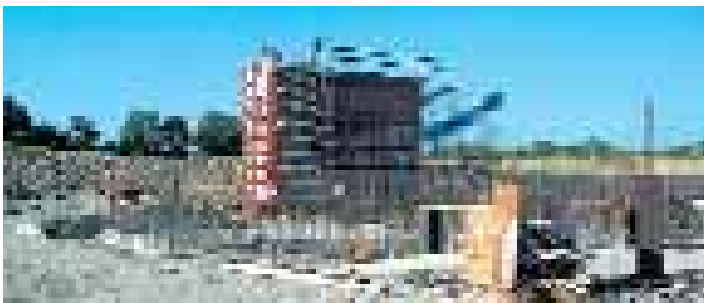
Project staff (l-r): Steve Alford, Salman Alvi, Mike Liszega, Vanja Jovic, Shawn Cleary, Rob Cochrane, Grace Ning, Rebecca Pringlemeir, and Marek Braczek.

Located in the Regional Municipality of York in Ontario between Toronto and Barrie, Schomberg is a village with a population of about 7000. The village had experienced significant growth, to the extent that its wastewater treatment facility was operating at capacity. As additional development in the village was put on hold pending upgrading of the treatment plant, the Regional Municipality decided to replace the village's existing facultative lagoons and recirculating sand filters with a new mechanical wastewater treatment plant to provide additional capacity to meet its growth.

The Regional Municipality retained Associated Engineering to complete the design of a new extended aeration treatment plant. The treatment plant will include fine screening, vortex grit separators, grit classification, aeration, clarification, sand filtration, and ultraviolet disinfection. Alum will be added for phosphorus removal and wastewater will be filtered to meet Ontario Ministry of Environment limits of 0.1 milligram per litre for phosphorus. Effluent will be discharged to the Schomberg River.

Sludge will be thickened in a gravity thickener, and stored in a sludge holding tank. Thickened sludge will be trucked York Durham Duffin Creek Water Pollution Control Plant for sludge stabilization.

Associated Engineering's design team met some interesting challenges on the design of this \$15.2 million facility. The new plant is being built in a portion of one of the existing facultative lagoons. This required that the lagoon be scraped to a clean base and the construction of a new berm in the lagoon to allow the continued use



Aeration tanks, blower room and RAS/WAS Station

of the remaining portion of the lagoon for treatment during construction. Construction of the treatment plant began in January this year in the north portion of the lagoon and the south portion has been returned to service as a facultative lagoon.



Piling at Schomberg Water Pollution Control Plant

"Due to the poor bearing capacity of the soil, all of the structures are being built on piles", Project Engineer, Paula Steel advises.

Currently, the contractor is erecting the structures. The project is scheduled for commissioning in August of 2008 and completion by the end of 2008.



Adopted by site rep. Steve Alford, mother goose built her nest next to the site trailer.

West Edmonton Sanitary Sewer will reduce CSO's by almost 50%



Aerial view of Dawson Park working shaft

Many older North American cities have combined sewers which handle both wastewater and stormwater. As the city grows, sewers must handle larger wastewater flows, which, if combined with a large rainfall event, could cause the sewer to become overloaded. To accommodate large combined flows, many cities construct combined sewer overflows (CSO's), to allow large flows to discharge into a watercourse rather than backup into the sewer system or overload the downstream wastewater treatment facility.

The City of Edmonton, like many North American cities, has a number of combined sewers and combined sewer overflows. To protect receiving waters, the City is reducing the magnitude and frequency of combined sewer overflows to the North Saskatchewan River and its tributaries. The West Edmonton Sanitary Sewer project is part of the City's short-term and long-term CSO Control Strategies which involve improvements to the City's sewage conveyance and treatment systems to reduce the impacts of CSO's.

The new West Edmonton Sanitary Sewer system will collect flows from the west end of Edmonton, on the north side of the river, and convey wastewater to the Gold Bar Wastewater Treatment Plant on the south side of the river. The sewer system will be built in stages, and will include twelve tunnels and a total of approximately 9,000 metres of trunk sewer.

Ultimately, the tunnels will provide conveyance capacity. Initially, the tunnels will provide both conveyance and storage. During dry weather conditions, flow is conveyed directly to the wastewater treatment plant. During wet weather conditions, flows are stored. When dry weather conditions return, stored flows are directed to the treatment facility.

Associated Engineering is currently working on the 12th Stage, W12, of the West Edmonton Sanitary Sewer Strategy.

The overall scope of the W12 project is to provide conveyance of combined wastewater flows from the Rat Creek area under the North Saskatchewan River to the existing South Highlands Interceptor at McNally under wet weather flow conditions. The W12 project includes 1.5 kilometres of 2,500 millimetre tunnel as well as a syphon diversion structure, syphon inlet shaft, a real time flow control structure, and outlet shaft.

Project Engineer, Jason Lueke, advises, "The W12 inverted syphon will improve the average annual capture and treatment of wet weather flows from about 56% to 86% by volume, and decrease the number of annual CSO occurrences from about 89 to 46 events per year on average."

Construction of the north tunnel segment began in April 2006 and was completed in January 2007. City of Edmonton crews used a modified machine in the City's inventory, a 3,454 millimetre open-faced tunnel boring machine (TBM), to excavate the north tunnel section. The tunnel primary liner is ribs and lagging.

The secondary liner will achieve the required 2.5 metre finished tunnel size.

Construction of the south tunnel under the river between the construction access shaft and McNally Shaft began in June 2007. This tunnel segment will be constructed using the City's newest tunnel boring machine, a 3,480 millimetre Lovat earth pressure balance machine. Tunneling of the south segment should be completed by 2008, with the commissioning of the W12 syphon by December 2009.

Associated Engineering completed hydraulic analysis and modelling, and design of civil, structural, ventilation, and odour control systems. We also assisted in obtaining permits and approvals and with public consultation.



City crews excavate undercut to facilitate tunnel boring machine installation

Effluent from Southshore Water Reclamation Facility approaches drinking water quality



Effluent from Southshore Water Reclamation Facility is discharged to forest wetland

Historically, sewage disposal for Canyon Creek, Widewater, and Wagner, the Southshore Communities in the Municipal District of Lesser Slave River No. 124 Alberta consisted of residential septic tanks and poorly performing disposal fields, which discharged into the soils adjacent to each property. The Municipal District raised concerns that the continued discharge of sewage effluent from disposal fields along the lake shoreline may have an adverse environmental impact and pose risks to public health.

Environmental concerns associated with the septic systems as well as municipal planning restrictions limited further growth in these communities. As a result of the environmental concerns, the Municipal District initiated design and construction of a low pressure wastewater collection system and advanced wastewater treatment for the Southshore Communities. The Municipal District retained Associated Engineering as its Prime Consultant for the feasibility study, preliminary and detailed design, and construction management.

The new wastewater treatment facility is sited in the Lesser Slave Lake watershed. The Municipal District decided that conventional wastewater treatment and direct lake discharge were not adequate to assure the protection of the lake, a major recreational water body. Associated Engineering proposed treating the wastewater to an extremely high standard using membrane bioreactor technology and discharging and polishing the treated effluent in forest wetlands. While many water treatment plants throughout Alberta, including the Southshore Communities' water treatment plant, use membrane bioreactor technology, this was the first application of this technology for municipal wastewater treatment in Alberta.

The membrane bioreactor treatment plant includes a 475 cubic metre flow equalization tank which accepts flows exceeding the plant's peak day flow of 1,200 cubic metres per day. Flow equalization is followed by screening with 0.75 millimetre screens. Membranes are installed in separate membrane aeration tanks in a non-freezing environment to enable their isolation for automated cleaning. The design of the membrane aeration tanks eliminates the requirement for bi-annual membrane removal for chemical cleaning and removes the concern that membranes cannot be removed during sub-zero temperatures for cleaning needed to restore flow capacity.

Effluent from the membrane process receives ultraviolet disinfection. The high effluent quality enables the use of in-pipe ultraviolet disinfection rather than in-channel units, which significantly reduced construction costs. Effluent is stored in a holding pond. From the holding pond, treated effluent flows to either of two dispersion ponds. Effluent is released continuously from the dispersion ponds to a forest wetland.

The forest wetland incorporates existing terrain, soils, and vegetation to create a system where wastewater can be released year-round. By incorporating existing natural vegetation, only a relatively small area of the existing forest needed to be removed to create the forest wetland. This approach also maintained wildlife habitat values and may lead to enhancements for particular species such as ducks and shorebirds.

Senior Process Engineer, Pat Given, reports, "Effluent from the Southshore facility approaches drinking water quality; typical effluent turbidity is less than 0.1 NTU and coliforms are not detectable."



External view of Southshore Water Reclamation Facility

Freda Leong: Inquisitive nature led the way to a career in engineering

Inquisitive by nature, Freda Leong has been questioning how things work all her life. As the daughter of a developer, Freda recalls going out on sites as a little girl and being in awe of everything. “I was always asking how things were done, how things worked, and why they built something. As a child, my biggest thrill was not swings or teeter totters, but getting onto a backhoe. I remember asking my Dad once how a toilet worked, which is not the sort of thing a child usually asks.”



Sib (l), Freda, and daughter Maebel

In high school, Freda recalls an engineering science teacher who had a gift for explaining things in a way that really made sense to her. “He was not just technical, but very practical as well. Plus his enthusiasm for engineering really came across. It was in his class that I realized that how I worked things out was really suited to engineering.”

A career in engineering naturally developed. Freda went to the University of Technology in Sydney, Australia, where she received a Bachelors degree in civil engineering. After graduating, Freda joined Sydney Water. “I had spent two co-op terms at Sydney Water’s Maintenance Depot, which showed me how things were done in the field and made me appreciate what needs to be considered when designing a water system.” At Sydney Water, Freda was responsible for asset management. She participated in condition assessments and evaluation of water and storm sewer assets, flood mitigation studies, creek rehabilitation studies, and preliminary designs for sanitary sewer, storm sewer, and water assets.

In 2004, Freda and her husband Sib decided to move to BC, where Freda had lived as a child. Freda states, “We both felt that Vancouver would be a good place to bring up our daughter, Maebel. It rains a lot, but the summers more than compensate—at least that’s what I have been telling Sib!”



Freda with Ted Molyneux from Public Works and Government Services Canada

Upon moving to BC, a family friend recommended that Freda apply for a position at Associated Engineering. “This family friend was a client of Associated Engineering. For a client to recommend Associated Engineering, the company must have impressed him immensely. That spoke volumes to me.”

Freda made an instant connection with Manager of Business Development, Lianna Mah. Meeting with Ed Bird, (then Manager of the Infrastructure group in the Burnaby office and now our Risk Manager), sealed the deal.

Since joining Associated Engineering, Freda has worked on the design of water systems for communities throughout BC, including Langley, Masset, Pemberton, Naramata, and many First Nations communities. She has developed a real passion for working with First Nations communities.

Freda advises that she has enjoyed the opportunity that her work provides to visit different communities and meet people around the province. One of her first meetings was with a Band psychiatrist regarding the communities she was working for. Freda recalls, “The meeting reinforced my belief that engineers must consider the human side of our work—the needs of the people in the communities and the operators who will run the water systems we design.”

Freda advises, “Overall, the highlight of my work has been the people I’ve met and the relationships that I’ve formed with our clients. Recently, I had a client say that as long as I was coming onto a project, they would not query the change in project personnel. That was a real pat on the back.”

Freda credits two mentors, Ed Bird in our Kelowna office and Dan Hogan from our Saskatoon office who have provided sage advice and helped her develop her career at Associated Engineering, encouraging her to focus on her passion: First Nations communities.

When asked if she has a philosophy regarding work, Freda states that “communication, honesty, and respect” are key. “Ask questions, listen, be honest and sincere,” she says, “and remember that respect is not given, but is earned.”

Freda is an active member and past president of AE’s Burnaby office Social Club. Outside of the office Freda and her husband, Sib, are busy with their daughter, Maebel. They enjoy eating, tennis, and travel. Freda jokes, “I’m not sure if eating is technically a hobby, but I love it!” Freda is also a member of the Consulting Engineers of BC’s Municipal Liaison Committee, and, on Dan Hogan’s advice, hopes to become more involved with Habitat for Humanity.

Asked if she has any good advice for young engineers, Freda says, “Find a good mentor. If you have an issue or questions about what you have been asked to do, take the time to digest the problem, but don’t be afraid to ask questions. Then, listen. That is the best way to learn.”

Water system improvements provide high quality water to Naramata residents

Located on the east shore of Lake Okanagan approximately 10 kilometres north of Penticton, the picturesque community of Naramata supports a significant orchard and wine industry. Naramata's water system, like many irrigation districts in the Okanagan Valley, serves a combination of agricultural and domestic demands, with the largest component being agricultural. Due to ongoing water quality issues on its upland creek water supplies, the Interior Health Authority had enforced a Boil Water Order for Naramata for more than a decade. Finding affordable solutions to the ongoing water quality issues presented a challenge due to the high agricultural water demands. Peak demands in this community of 2000 can reach 30 million litres per day or 15,000 litres per capita per day; this compares with typical per capita water usage of 400 litres per day.

To solve water quality issues, the Regional District of Okanagan Similkameen (RDOS) established the Naramata Water Advisory Committee to provide local input, direction, and assistance in the planning and implementation of the improvements required. The RDOS also engaged Associated Engineering to design and oversee construction of a series of water system improvements. The \$8 million project involved designing water supply and treatment upgrades and developing a plan for future separation of the domestic and agricultural demand components. The new facilities would replace an existing supply system which delivered chlorinated water from two existing upland creek intakes and two existing lake intakes.

The initial project design concept involved completing a major upgrade to the two existing lake intakes to draw the full demands from the higher quality lake source. During the preliminary design phase, our design team identified several risks regarding one of the intake sites, which led to a value engineering review with the Regional District staff. A suggestion by one of the Regional District staff ultimately led to Associated Engineering developing a new concept that eliminated the intake of concern. The new concept involves doubling the capacity of the existing deep lake intake by upgrading the existing intake screen and constructing a new raw water pump station. Hydraulic calculations confirmed that the existing 750 metre long intake conduit could handle the increased flow rate. We replaced the existing 44 litre per second Townsite Pump Station with a new 340 litre per second Raw Water Pump Station, and installed a new 2 kilometre long, 600 millimetre diameter raw water supply pipeline from the Raw Water Pump Station to the new water



Chief operator, David Carlson, checking UV reactors

treatment plant site.

The new treatment plant includes ultraviolet disinfection and sodium hypochlorite generation to provide two-stage disinfection. The lake water, drawn through the intake at a depth of 20 metres, is typically of good quality with turbidity generally below 0.5 NTU. Ultraviolet primary disinfection is provided to inactivate *Giardia* and *Cryptosporidium*.

Two sets of treated water pumps deliver water from the treatment plant to higher elevation pressure zones. The supply system improvements include a new 800 metre long, 400 millimetre diameter South Zone treated water main and 1.2 kilometre 300/250 millimetre diameter North Zone treated water main interconnecting to the existing distribution system.

The design incorporates a number of energy efficient features, including using lake water as the energy source to heat and cool the Raw Water Pump Station and the treatment plant. The tempered water is then redirected into the treated water distribution system to eliminate liquid waste and energy losses.

The team developed a design approach to ensure a continuous water supply to the community during the construction period using the three other existing intakes. Construction of the water system improvements was completed in March 2007. Fittingly, the official opening of the new system was held on March 22, 2007 – World Water Day. This event was hosted by RDOS Area Director, Tom Chapman, who played a significant role in implementing the project along with representatives of the Naramata Water Advisory Committee. Other attendees included BC Community Services Minister, Ida Chong and RDOS chair, Dan Ashton, and other RDOS board directors.

Project Manager Bill Harvey states, "The success of this project was due to excellent teamwork between the Regional District, the Naramata Water Advisory Committee, the Contractors, Maple Reinders and H&M Contracting, and the design team. The Regional District operators were actively involved in the project starting at the predesign stage, provided key input into design decisions, and were actively involved during startup and commissioning of the new facilities."

Other AE staff included Don Greer, Mario Laurin, Sean Bolongaro, Miles Brook, Keith Kohut, Suzi Valoen, Simeon Dee, Peter Bakker, Amir Mirsalehi, Sam Lui, Alice Liu, Francois Atkinson, Yong Kim and G Humi.

Family and friends bid happy retirement to Gus Stobert



On April 30, 2007, Associated Engineering bid farewell and happy retirement to Design Technologist, Gus Stobert. Past and current staff, family, and clients attended a reception to reminisce and celebrate the 37 years Gus worked for the company.

Gus began his career with Associated Engineering in the Edmonton office in 1969, back in a time when drafting was still done by hand. He became known for his expertise in drafting and detailing on water and wastewater treatment and pumping station projects. Retired Engineer Gene Luchka, recalled that engineers quickly recognized Gus for his technical expertise as a drafting technologist and detailer. Many engineers specifically requested Gus for their process mechanical drafting on water and wastewater projects.

Over the years, Gus completed design of water and wastewater plants across Canada, including facilities in Edmonton, Calgary, Lethbridge, Red Deer, Medicine Hat, Lloydminster, Grande Cache, Smith, Canyon Creek, Vancouver, Whitehorse, and Waterloo. Gus was the chief process mechanical drafting technologist for the design of the E.L. Smith Water Treatment Plant and multiple upgrade projects at the Gold Bar Wastewater Treatment Plant in Edmonton. Gus is known for the original 3D drawing he created for the E.L. Smith, Stage 2 - Filter Building project in the 1980s. These drawings were created long before we moved to AutoCAD and computerized 3D development.

Gus was instrumental in the design of the Southshore Water Reclamation Facility in the Municipal District of Lesser Slave River, the first wastewater treatment plant of its kind in Alberta. Gus contributed to many award-winning projects, such as the Rogers' Sugar Wastewater Treatment Plant, which received the Consulting Engineers of Alberta Resource Development Award of Excellence

and the Environmental Award of Merit in 2000.

Gus was not only an expert designer and drafter, but also a mentor to staff. Vice President of Water Treatment, Ian Wright advised, "When I joined the company, I soon realized what a wealth of information Gus had. He knew more about process mechanical detailing than anyone I'd met."

Gus also contributed to the company by assisting in the development and implementation of CAD processes, procedures, and standards, not only in Edmonton, but also in the company's Toronto office when it opened in the 1980s.

Gus helped instill in our staff our values of quality, dedication and client commitment. Process Engineer, Rudy Chan explained how Gus taught him that there were no "grey" areas in design--that everything must be in the right spot for the right reason.

In retirement, Gus and his wife, Carla hope to spend more time at their cabin.

Gus and Carla plan to renovate the cabin into a permanent residence and devote more time to his favourite sport, fishing. We wish Gus and Carla many happy, warm, comfortable years at the lake.

Martin Jobke appointed to Vice President and General Manager position

President and CEO, Kerry Rudd, is pleased to announce the appointment of Martin Jobke to Vice President and General Manager of the British Columbia operation.

Martin is a Civil Engineer with 23 years experience specializing in bridge engineering. Martin joined Associated Engineering in 1987 as a design engineer. Since joining the company, Martin has progressed from design engineer to project engineer, project manager, and group manager, before taking on the responsibility of the BC operation.

Congratulations, Martin!



David Harvey inspires a new generation of structural engineers

By David Harvey, M.Sc., P.Eng., StructEng., FISTRUCTE

Since the last issue of AE Today, I have spent several months in the UK presiding over meetings of the Executive Board and Council, and attending committee meetings and annual dinners of the domestic branches. I also attended several important events, including the 2007 Institution of Structural Engineers (ISTRUCTE) Annual Conference and Annual Dinner, which were attended by delegates from around the world. It is exciting to discover the many cultural differences that exist internationally among structural engineers, yet we all share a common professional bond.

Another delightful duty was participating in the judging of the 2007 Structural Awards along with a panel of 14 distinguished judges. Having hosted last year's event and presented certificates to the winning entries, including AE's Commendation Award for the Whitemud Creek Arch (see Issue No. 1, 2007), I know how very exciting the evening is. This year, ISTRUCTE received 152 submissions from around the world, all displaying excellence in structural engineering. Winners will be announced in London on November 14th at the annual awards celebration.

Perhaps the most emotive event I hosted was the Peoples and Papers Awards luncheon, at which I had the great pleasure of recognizing the contributions of the Institution's leading volunteers, along with the best technical papers that were published in the journal, *The Structural Engineer*. I was delighted to award a rare ISTRUCTE Honorary Fellowship to former Construction Minister Nick Raynsford MP, Chair of the Construction Industry Council.

One of the great honours of the presidency is to award the Institution's Gold Medal, its highest individual award for achievement in the field of structural engineering. Some of the most famous names in structural engineering history are among the Institution's gold medalists. The medal has only been awarded 39 times during ISTRUCTE's 99 year history. I had the distinct privilege of awarding the last two. The 2006 Gold Medal was awarded to Professor Roger Johnson for research into composite structures, and the 2007 Gold Medal was won by structural steelwork engineer Joe Locke, who built some of the world's most significant steel structures.

I also made overseas visits to South East Asia, including India. The rapidly emerging Indian economy has a significant international business component, and young structural engineers in India have a great interest in an internationally recognized professional qualification. India currently graduates over 200,000 engineers annually. I visited several of India's prominent engineering schools to inform the senior students about the value of joining ISTRUCTE.

During my tour, I was able to visit Mumbai, Chennai, Kolkata, and Delhi. At each city, I met with local members and professional organizations, and also signed an agreement with the fledgling

Indian Association of Structural Engineers.

India is an amazing country – not only is it home to 1.1 billion people, but there are elegant historic buildings, and some breathtaking new structures of international prominence. I was taken to see the impressive Second Hooghly River Bridge in Kolkata, and toured the cutting edge Bandra Worli Sea Link in Mumbai, currently under construction.



David Harvey (r) presents Nick Raynsford the rare ISTRUCTE Honorary Fellowship Award

While in India, I fulfilled a life-long ambition to visit the Taj Mahal. This most beautiful of historic structures is an amazing site which attracts some 2.5 million visitors annually to the City of Agra. A monument to Mumtaz Mahal, a beautiful Indian princess, the Taj Mahal took 20,000 artisans 22 years to construct. The nearby Agra Fort and the Taj Mahal were declared world heritage sites by the UN to ensure the long-term preservation of these important historic buildings.

The Indian structural engineers were incredibly welcoming, something I have noticed everywhere in my travels. Engaging with other engineers, including those of international prominence, has been universally rewarding for me. During my

presidential year I have presented the projects of Associated Engineering in many parts of the world, which has generated much interest and drawn many favourable comments. I hope that my message will encourage structural engineers to share knowledge, and inspire future generations to great achievements in a most rewarding career.

Associated Engineering opens new office in Prince Albert

Associated Engineering is pleased to announce the opening of our new Prince Albert, Saskatchewan office. This new office, will allow us to better serve our clients in the area, including the City of Prince Albert, Prince Albert Grand Council, Indian and Northern Affairs Canada, and Saskatchewan Highways and Transportation. For more information on our services, contact Marvin Loewen, Manager or Kevin Cudmore, Project Engineer.

Our new office is located at:

102 - 1061 Central Avenue
Prince Albert, SK S6V 4V4
Tel: 306.764.3040.

Innovative risk assessment model helps in prioritizing land acquisition and budgeting

The Province of Saskatchewan's Department of Highways and Transportation has embarked on a planning program for future highway construction, and has adopted an integrated highway corridor protection approach to manage future land acquisitions costs, facilitate long term planning, and meet the needs of regional planning.

To ensure property required for future highway corridors is protected and available when needed, Saskatchewan Highways and Transportation engaged the assistance of Associated Engineering to help develop processes and policies.

The Associated Engineering team undertook a comprehensive review of the existing Saskatchewan approach, as well as the approaches used in other Canadian provinces and selected states in the United States. In addition, we sought feedback from the province's municipal government associations and Saskatchewan Government Relations. The project resulted in policy development needed to support a new approach to highway corridor protection.

Changes to the existing property protection model and consistent application of legislation, regulations, and policies will create a more systematic and integrated approach for protecting land needed for future highway corridors. Associated Engineering developed an



Aerial view of a Saskatchewan Highway

innovative risk assessment model, which can be used to rank four property protection tools with the time of construction and risk of impact of not having property available for future highway construction.

Developing a risk-based Provincial Highway Property Management Plan (PHPMP) will provide the needed coordination and a framework for proactive protection measures. Project Manager, Monique Kealey advises, "This model will assist the

client's staff in budget development and prioritizing land acquisition for future needs."

This plan will guide acquisition decisions and will provide the information base needed for a much strengthened relationship with the community planning activities of municipalities. "Improved communication will strengthen the relationship with stakeholders and provide opportunities for the department to work together with stakeholders to protect the property," Monique states.

The next steps for the client include preparing a detailed implementation plan addressing the development of the PHPMP, creating a risk assessment methodology, updating the regulations, and developing a land acquisitions strategy.

Toronto office adopts a highway

The Toronto office recently signed up for the Ontario Ministry of Transportation (MTO) Adopt-a-Highway program. Staff have committed to cleaning up part of Highway 427 outside their office. This summer twenty staff volunteered their time and energy to pick up garbage during the lunch hour and were rewarded with a pizza lunch. A dozen full garbage bags were collected, including a bicycle! The staff has committed to do this two to three times per year. Thanks to all participants, and organizer, Linda Wojcicka.



Saskatoon staff build Habitat for Humanity

Kudos to Saskatoon staff who participated in the Habitat for Humanity Build in Saskatoon on July 11. Bert Munro, Vice President and General Manager of our Saskatchewan operation states, "Based on my estimates, the Habitat for Humanity team has contributed over \$30,000 to the community in kind and in monetary contributions. I am immensely proud of the individuals and the team that committed to and followed through on the Habitat for Humanity Build in Saskatoon."

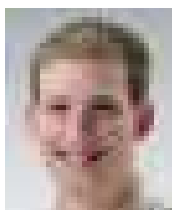
Burnaby office makes Mission Possible

A team from the Burnaby office, including Pat Stancombe, Lester Marr, Guillermo Quijano, Louise Parnell, Ben San Wong, Prshant Batra, Michael Balescu, and Martin Jobke, volunteered their time to help prepare and serve breakfast to 100 of Vancouver's less fortunate people. Martin Jobke, Vice President and General Manager of our BC operation relates, "The gratitude that was conveyed by many of the individuals at the Mission was overwhelming." Thanks to event organizer, Freda Leong.

Employee News

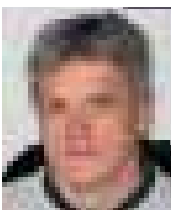
Bert Munro, Vice President and General Manager of the Saskatchewan operation, is pleased to announce the following appointments:

- **Jason Horner:** Operations Manager of the Saskatoon office
- **Carma Holmes:** Operations Manager of the Regina office
- **Bob Hawboldt:** Manager, Water and Environmental Group in the Saskatoon office.



Jason is a Transportation Engineer with nine years of experience in design and construction of highways across Western Canada. Jason will continue his roles as Manager of the Transportation group in Saskatchewan, and Project Manager on transportation projects.

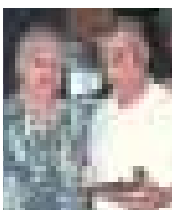
Carma is a Structural Engineer with ten years of experience in the design of industrial, municipal, commercial, residential and institutional structures, as well as industrial and municipal bridges. Carma will continue to provide structural expertise on buildings, infrastructure, and transportation projects.



Bob is a Mechanical Engineer with a Ph.D. specializing in fluid dynamics, thermodynamics, and heat transfer. Since joining Associated Engineering in 1999, Bob has specialized in hydraulic analysis, transient analysis, and computational fluid dynamics. He has participated in the analysis of water and wastewater facilities across Canada. He will continue in his role as a hydraulic specialist.

Graham Sterpam of our Edmonton office has been elected to a Fellow of CSCE. Graham is a Civil Engineer with 18 years of experience in design, construction and project management on municipal infrastructure projects. Graham's expertise includes site and land development, water distribution, wastewater collection and treatment, and stormwater management. Congratulations, Graham!

Congratulations to Gary Coons (l) of our Regina office who received the 2007 David Walker Award from the Western Canada Section of the American Waterworks Association Cross Connection Control Committee. This award was established in 1993 by the Cross Connection Control Committee to recognize individuals whose careers in this program exemplifies vision, constructive leadership, excellent professional performance, and accomplishments characteristic of the late David Walker. Congratulations, Gary!



Ryan McDowall represents Canada at 90th Anniversary of Vimy Ridge in France

Ryan McDowall is a recent graduate from the Saskatchewan Institute of Applied Science and Technology in Moose Jaw. He recently joined our Saskatoon office as a Civil Technologist in our Infrastructure group. A long-standing Canadian Forces Reservist, Ryan travels back and forth weekly from Saskatoon to his Canadian Forces unit in Moose Jaw. Earlier this year, Ryan was selected as a representative of his unit to attend the 90th anniversary of the Battle of Vimy Ridge in France. Congratulations, Ryan, on this honour.

The Canadian Corps led the Battle of Vimy Ridge in northern France, which took place April 9 to 12, 1917. Our soldiers were victorious. Today, the Canadian National Vimy Memorial, including a 10-storey white limestone monument, commemorates the 3600 soldiers who lost their lives in this battle.



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If you have any comments or suggestions for future issues, contact your local Associated Engineering office or:



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16 Avenue North Community Traffic Management Measures Study: A Sustainable and Community Sensitive Solution

The City of Calgary initiated the 16 Avenue North Urban Corridor Study to review and update the 1977 Transportation Functional Study. It was soon determined that a more detailed study was required to address the unique nature of the corridor. The study was expanded to consider mobility, land use, and urban design to assist in revitalizing the inner city corridor. The study resulted in a comprehensive long-range Concept Plan that recommended 11 median breaks, rear lane commercial access, "people friendly" design, increased residential and commercial densities within the first block north and south of 16 Avenue North and enhanced pedestrian environment to promote compatible pedestrian and vehicular movement. The recommended center median with increased median breaks and traffic signals created different dynamics for community and commercial access along 16 Avenue North and into the eight neighbouring communities. The changes in community access led to the need for a traffic management study. Council committed to the further study of the community traffic issues when they approved the concept plan.



The issues identified included:

- Shortcutting
- Speeding along laneways
- Speed of traffic within the communities
- Turn issues from 16 Avenue North into the communities
- Safety of pedestrians around the school zones

There was also a unique issue with senior citizens crossing mid-block from a seniors' apartment complex.

The City of Calgary retained Associated Engineering to conduct the Community Traffic Management Study. The objective of the study was to create a Traffic Management Measures Plan for each of the adjacent communities through a public engagement process. The study was to identify traffic management measures on the residential side streets adjacent to 16 Avenue North required to address traffic access and circulation issues within and through the adjacent eight communities.

The process of undertaking a Community Traffic Management Measures Plan as a result of an adjacent Capitol Works Project was new to the City of Calgary. The plan was to be completed such that the resulting community traffic management measures that were identified could be implemented as part of the construction upgrade contracts for 16 Avenue North Urban Corridor. This required the plan to be developed and accepted within a seven-month period.

The six communities adjacent to 16 Avenue North between 14 Street Northwest and 6 Street Northeast involved in the study included Capitol Hill, Mount Pleasant, Tuxedo Park, Winston Heights/Mountview, Crescent Heights, and Renfrew.

The traffic issues identified by the communities were obtained during the original functional study through public open houses, business meetings, and Listen and Learn sessions. The issues were confirmed with the transportation representatives from each of the communities.

The initial series of public information meetings were held to inform the residents about the study and the study process, identify the types of traffic management measures available, present the preliminary traffic management measure options for the community, and explain the next steps in the study for selection and implementation of the measures.

Once the initial series of public information meetings were completed and comments reviewed, detailed opinion surveys were developed for each community and delivered to all households and businesses within approximately 2.5 blocks from 16 Avenue North.

A second series of public information meetings was undertaken to provide the public with an opportunity to view the opinion survey results and view the preferred traffic management measures plan for the community.

The preferred plans received full endorsement from Land Use Planning and Transportation Committee and Calgary City Council.

