

Spring 2004
Volume 1, Issue 2

What's Inside?

2

President's Message

3

Conference Recap

4

Profile:
Hamilton Office

8

Profile:
Winnipeg Office

10

Community Involvement

11

Employee Commitment



University of Calgary's ICT building

Earth Tech's Facilities Group continues to build a name for itself

Walk into a modern office building, stop for a moment and look around you; chances are Earth Tech's Facilities Group has been there. Beyond the building walls and ceilings lies a complex network of infrastructure and countless systems, faithfully attending to hundreds of operational duties, each aimed at providing the most comfortable environment possible.

Regardless of the weather outside, today's modern building is climate-controlled by an array of boilers, chillers and computer automated systems working around the clock to start, stop and monitor dozens of mechanical and electronic sensors and devices. Winter or summer, the building environment remains at a pleasant 20 degrees Celsius, compliments of a central computer that tracks both heating and cooling, while optimizing air flow and energy use.

Low-glare luminaries with colour-corrected fluorescent lamps provide a comfortable wash of ambient light, well suited to the computerized office. Adjustable task lighting illuminates a range of demanding visual jobs while minimizing energy costs. Natural daylight reflects off walls and ceilings

to enhance a visually pleasing space.

HVAC, or heating, ventilation and air conditioning, along with lighting requirements, have always assumed an important role in a building's health. The facilities industry is, however, constantly evolving. Alternative project delivery methods are now commonplace. The traditional design-bid-build approach to project delivery is no longer a given. An increasing number of clients are requesting single source provision of all engineering services. The desire for intelligent and sustainable buildings is increasing. The need for cost-effective integrated solutions is constant. More than ever, an integrated approach is now required in the design of buildings. At Earth Tech, we recognize this need.

Earth Tech's Facilities Group was formed to respond directly to the changes occurring in the building industry. Through the Facilities Groups in Vancouver, Calgary, Edmonton, Winnipeg, and Toronto, an integrated design approach ensures that the mechanical, electrical, structural and industrial engineering services work together to provide society with facilities that address both the life cycle of the facility, and the effect that the facility will have

President's Message

Welcome to the Spring issue of our Canadian newsletter. In this issue, you will read about Earth Tech's continued commitment to our clients through ongoing quality service on the many projects we have undertaken, as well as Earth Tech's understanding of our clients' evolving needs. Stories include a profile on our Facilities group and profiles on both our Winnipeg and Hamilton offices. We are proud to share various success stories on exciting projects our team of professionals across Canada has worked on, as well as an overview of the various conferences we have participated in through industry-specific presentations on today's issues and trends. As always, we have a special section dedicated to our fundraising and community efforts, and employee news.

I am pleased to report that both Earth Tech Canada and Earth Tech Global continue to meet and exceed our objectives as we move into the next quarter of our fiscal year. This success is a clear reflection of the tremendous efforts of our employees and the continued confidence and support of our clients. We are currently in the process of finalizing our plans for 2005, as the Canadian economy continues to remain strong and a positive forecast continues to be on the horizon for the construction and engineering industry. We continue to be committed to our own growth and ongoing focus to excellent client service delivery, as we move forward on our plans to roll out an aggressive implementation strategy on operations excellence.

I hope you enjoy our latest issue as we continue to open our doors and share our many stories and successes – all due to our clients and our employees!



Best Regards,
Rob Andrews
President, Earth Tech Canada Inc.

on the environment throughout the various stages of its life.

In the early 1990s, it was predicted that, by the year 2000, most workplaces would operate as "intelligent buildings" – office buildings capable of managing and monitoring themselves via a huge range of systems from air quality, temperature and lighting control, to telecommunications, life safety and security systems. At Earth Tech, we have made this prediction a reality.

One such example of an intelligent building design is the University of Calgary's ICT building where Earth Tech provided innovative mechanical engineering for this 16,000 m², \$32.5 million, seven-storey building. One of the most significant mechanical engineering challenges in a high-tech building such as ICT is finding a means to offset the high internal heat gains that result from the sheer density of electronic equipment. Earth Tech's approach to this challenge has resulted in ICT being one of the first buildings to use structural slab radiant cooling in Canada.

New technologies, and rising energy and replacement costs, work together to influence how we approach our new facilities to provide buildings that are not only intelligent but also address the concerns of the environment. Innovative and sustainable structures do not

necessarily have to be massive towers of glass and metal. The Gleneagles Community Centre, featured in this issue, illustrates how an integrated approach by the engineers, architects and the community can work together to provide a facility that highlights sustainable design within the residential community.

For almost a century, clients have been bringing their facility requirements to Earth Tech. We take pride in our signature buildings, but each job, whether big or small, is important. Earth Tech's Facilities Group offers a full spectrum of civil/structural engineering, HVAC, mechanical/hydraulics, electrical engineering and instrumentation and control engineering for the design and construction of facilities. We streamline industrial operations, through process and plant improvements, often on a fast track basis, and we provide the engineering expertise for renovation and retrofit of existing facilities, as well as the design and construction of new facilities.

For further information on our facilities services, please contact:

Errol Hula, Vancouver – (604) 298-6181

Mike Shewchuk, Edmonton – (780) 488-6800

Dave Michie, Calgary – (403) 254-3301

Myron Paryniuk, Winnipeg – (204) 926-1176

Bryan Shaw, Markham – (905) 886-7022

case study

Westside Wastewater Treatment Plant

Client: Central Okanagan Regional District

Location: Kelowna, British Columbia, Canada

Problems: Expand the plant to handle increased flows and loads for the next 23 years

Challenges: Drop phosphorus discharge into lake and increase capacity



The Westside Wastewater Treatment Plant (WWTP) has had a significant effect on the amount of phosphorus released into Okanagan Lake. During the first full year of plant operation, the amount of phosphorus discharge to the lake dropped to 150 pounds (68 kg), down significantly from 2,370 pounds (1,077 kg) the previous year.

Phase 1 design increased the capacity from 0.74 mgd (2.8 ml/d) to 2.2 mgd (8.4 ml/d). The design included a new headworks where screens and a vortex chamber removed and dewatered large solids that could cause mechanical problems further downstream in the treatment process. New, larger clarifiers remove settleable solids and a larger fermenter conditions sludge for wasting and produces the volatile fatty acids in its supernatant that enhance the nutrient removal mechanisms of the bioreactor.

Following a predesign study for the Kelowna pollution control centre, Earth Tech provided engineering services for the Phase 2 expansion to increase plant capacity by about 35 percent to accommodate average flows to 7.27 mgd (27.5 ml/d).

The Westside WWTP is an advanced biological nutrient removal (BNR) facility, which serves this community 15 km south of Kelowna. Earth Tech was retained to perform predesign, functional and detailed design to expand the plant to accommodate increased flows and loads.

Canadian Water and Wastewater Association

Simon Breese, Practice Leader for the Drinking Water Supply Group, of our Vancouver, British Columbia office, presented a paper on April 4th at the 11th Annual Canadian National Conference and 2nd Policy Forum on Drinking Water, hosted by the Canadian Water and Wastewater Association (CWWA). The paper was entitled *DAF vs ActiFlo – Case Studies in High Rate Clarification* and presented two case studies on the use of conventional DAF, high rate DAF and ActiFlo ballasted clarification for the City of Winnipeg, as well as the Zone 7 Water Agency, Pleasanton, California. For more information, please contact Simon at (604) 298-6181 or simon.breese@earthtech.ca

Hirsh Taniguchi, Senior Consultant in the Water Technical Practices Group and based out of our Markham, Ontario office, presented a paper on *Ontario's Game Plan for Safe Drinking Water* for the benefit of CWWA conference attendees from across the country. The paper presented the province's strategy to optimize protection of public health, covering its background and implementation status and outlined highlights of the Safe Drinking Water Act, its implications and the need for a proactive approach by water providers to ensure ongoing compliance. For more information, please contact Hirsh at (905) 886-7022, extension 2325 or hiroshi.taniguchi@earthtech.ca

Globe 2004

Earth Tech Canada participated at this year's 8th Biennial Trade Fair & Conference on Business and the Environment. The event, which took place at the Vancouver Convention & Exhibition Centre, hosted hundreds of delegates within the public and private sector. Representatives from Earth Tech's Vancouver office, including **Greg Scott**, **Konrad Fichtner** and **John Lambert**, had the opportunity to meet with many delegates and discuss issues pertaining to advanced transportation technologies, sustainable construction and green building technologies, climate control and clean energy solutions, water and wastewater plants and the environment.

In addition, Greg made a project presentation that also awarded him the Gold LEED certification. Earth Tech's understanding of the USGBC and LEED program continually provides our clients with quality service to meet their business needs.

For more information, please contact Greg at (604) 298-6181 or greg.scott@earthtech.ca

Automotive Parts Manufacturers' Association

Earth Tech Canada was a corporate sponsor at the recent Automotive Parts Manufacturers' Association Annual Conference & Trade Show. Held in Hamilton, Ontario, members of Earth Tech's environmental practice, including **David Wilson**, Central Region Environmental Practice Leader and **Tim Murphy**, Manager, Environmental Management Systems, took part in this year's theme discussions about *Prospering in a Changing World*.

Among the topics discussed were automotive trends including innovation and technology, globalization of the industry, shifting responsibilities within the supply chain and the environment and the supply chain's impact on it.

For more information on our environmental services, please contact David Wilson at (905) 886-7022, ext. 2875 or davidg.wilson@earthtech.ca or Tim Murphy at (905) 578-5050 or timothy.murphy@earthtech.ca

Water Environment Association of Ontario (WEAO)

At this year's WEAO conference, Earth Tech Canada was both a platinum sponsor and a presenter of the following six abstracts:

1. Timing is Everything: The White Oaks Sanitary Sewer Diversion and Storage Project
2. What's on the Radar: The National Benchmarking Program is Improving Wastewater Service Delivery Across Canada
3. Stormwater Benchmarking: Creating Proactive Management
4. Nutrient Removal: The Manitoba Experience
5. Selection and Implementation of a New Biosolids Management System for the Sarnia Water Pollution Control Centre
6. Successful Design/Build Implementation: The Strathroy Sewage Treatment Facility Upgrade and Expansion Project

John Haasen, Regional Manager, Western Ontario/Niagara & Special Projects, gave opening remarks at the gala luncheon where he spoke about current issues facing the water and wastewater industry. Also, **Tony Petrucci**, Earth Tech's Central Region Practice Group Leader for the Water & Wastewater Group, received recognition for his yearlong efforts as President of the WEAO for the 2003/2004 year.

For more information on our water and wastewater services, please contact Tony Petrucci at (905) 886-7022, ext. 2866 or tony.petrucci@earthtech.ca

John Munroe, based in our Calgary, Alberta office and whose primary focus is on mechanical engineering and sustainable design, was selected to provide a poster presentation at the US Green Buildings Council Green Build Expo in Pittsburgh, Pennsylvania. The paper was entitled *University of Calgary Information and Communications Technology Building: Performance of a Thermo-Active Slab Radiant Cooling System Compared to Simulations*. Further details on this topic are mentioned in our Facilities profile on page 1. If you would like to receive more information on the presentation, please contact John at (403) 254-3331 or john.munroe@earthtech.ca

Ontario Good Roads Association

Earth Tech Canada was a corporate sponsor at the Ontario Good Roads Association (OGRA) annual conference held earlier this year. It was co-hosted by the Rural Ontario Municipal Association.

The event, which took place at the Royal York Hotel in Toronto, hosted 1500 delegates from municipalities large and small. Members of Earth Tech, including **Doug Willoughby**, Central Region Transportation Practice Leader and **Bob Koziol**, Manager, Roads & Transportation Planning, took part in meetings, seminars and workshops and attended the tradeshow representing more than 70 companies.

Earth Tech received verbal and written acknowledgement at the awards luncheon that recognized outstanding achievements of individuals in a number of different categories including diversity and innovation and longstanding service.

For more information on our transportation services, please contact Doug Willoughby at (905) 886-7022, ext. 2358 or doug.willoughby@earthtech.ca

profile

Hamilton office: Open door to many services

Contributing to the well-being of the communities, where our employees, clients and other stakeholders live and work, is an important part of who we are and what we do.

The Earth Tech Hamilton office is steadily expanding with diverse staff resources and expertise that serve government and business sector needs at a local, regional, national and international level.

Established in 1960 as a general engineering services practice (originally Proctor & Redfern), the Hamilton office has been involved in many of the area's major infrastructure facilities and utilities initiatives, such as the Woodward Wastewater Treatment Plant, the Woodward Water Treatment Plant, the Redhill Creek Expressway, Claremont Hill Mountain Access Road and numerous solid waste planning and landfill design projects throughout Hamilton, Halton and Niagara.

Today, the Hamilton office provides a variety of services including Environmental Planning, Solid Waste Management Planning, Environmental Site Assessment and Remediation, Strategic Environmental Management, Landfill Design, Process Engineering, Information Management and Automation, and Urban Infrastructure.

Environment & Remediation

The Environment & Remediation (ER) Group is comprised of three service areas: Ecological Services, Site Investigation and Remediation Services, and Construction Services. The ER Group is led by Department Manager **Denise Lacchin** with service areas managed by **Gary Epp** (Ecological Services), **Dave Gourley** (Construction Services) and **Meggen Janes** (Site Investigation & Remediation Services). The ER Group has been conducting environmental site investigation and remediation services, contracting/construction services and ecological services for many years for a number of private and public sector clients. They include the commercial/industrial, automotive, pulp and paper, real estate and development, financial and legal sectors, as well as municipal, provincial and federal governments.

Earth Tech Hamilton's ER Group has been engaged in a large remediation project at a shopping mall redevelopment in Ottawa for the past four years. As the environmental consultant, the ER Group oversaw the removal of impacted soils from a former dry cleaning facility and the removal of underground storage tanks and associated impacts. Work included the on-site inspection of excavation activities for soils and groundwater impacted by chlorinated solvents and petroleum hydrocarbons, the on-site treatment of water removed from the excavation, and the installation of a full-scale dual phase extraction system. Ongoing work for the site includes a site-specific risk assessment and the installation of an in-situ remediation system for petroleum hydrocarbon impact.

Strategic Environmental Management

Management consulting is a growing business within the Hamilton office. The Strategic Environmental Management (SEM) Group, managed by **Tim Murphy**, provides management systems consulting, regulatory compliance auditing, system conformance auditing, regulatory training, and systems training. Clients include industrial, commercial, institutional and government organizations such as DaimlerChrysler, Magna International, Dana Corporation, Canadian National Railway and the City of Hamilton.

For the City of Hamilton, the SEM Group is developing and implementing an Integrated Management System

Design & construction services for solid waste facilities in Grenada, West Indies





(IMS) for its Public Works Department and Biosolids Program. The IMS conforms to both the ISO 14001 (environmental) and BSI 18001 (occupational health and safety) management standards. Once completed, this IMS will be one of the first of its kind for a municipality in Canada. The SEM Group has also undertaken ISO 9000 upgrades, as well as occupational health and safety systems implementations. These upgrades have been conducted primarily for automotive parts manufacturing clients, however pending clients include municipal utility corporations responsible for managing electricity, water and telecommunications.

Landfill Design

The Hamilton office has a strong reputation in the industry for landfill engineering services, creation of operational plans design of leachate containment, collection and pumping systems. With a wide network of landfill research scientists, designers and site operators throughout the world, the staff stays abreast of the latest developments. Typical services include detailed design of the site infrastructure: buildings, roads, leachate collection system, clay liner, contingency sub-liner, stormwater management system, site utilities, soil balance and compost facility and landscaping.

Information Management and Automation Design (IM&A)

IM&A provides part of the overall plant engineering design services for water/wastewater plants and has now been providing independent design and design/build services. Recent accomplishments include the SCADA upgrade for the Region of Peel—a design/build project that involved the integration of five water/wastewater facilities for operations to view and control all plants from any location.

Currently, the department is completing a massive controller upgrade for the replacement of 63 operational water sites

controllers and the administration of three contractors plus regional staff.

The IM&A group also services other Earth Tech practice areas: for example, air quality monitoring to the Environmental Group, services to the Transportation Group for the Greater Toronto Airports Authority, as well as to Urban Infrastructure as part of Realtime Analysis and Landfill Leachate controls.

Urban Infrastructure

The Urban Infrastructure division, represented by **Rob Cochrane**, provides solutions to meet our private and government clients' water distribution, wastewater collection and municipal design needs by providing traditional engineering consulting, as well as design/build services. The group provides the full complement of infrastructure program management, pre-design, Class EA, approvals, engineering design and construction services to companies in various sectors. Clients include the City of Hamilton, Regional Municipality of Halton, Regional Municipality of Niagara, Regional Municipality of Peel, City of Brantford, as well as many others.

If you would like to receive more information on the various activities in the Hamilton office, please contact **Claudio Cuffolo** at (905) 578-5963 or claudio.cuffolo@earthtech.ca

Gleneagles Community Centre

The Municipality of West Vancouver

Project Name:

Gleneagles Community Centre

Location:

Municipality of West Vancouver

Client's Name:

City of West Vancouver

Prime Consultant:

Patkau Architects

Electrical Engineering:

Earth Tech Canada Inc.

Mechanical Engineering:

Earth Tech Canada Inc.

Structural Engineering:

Fast & Epp

Civil Engineering:

Webster Engineering

Landscape Architect:

Vaughan Landscape Planning & Design

General Contractor:

Country West Construction Ltd.

Looking for a new community centre in Gleneagles? Look no further, it has arrived. The Municipality of West Vancouver addressed the need for a new community centre in the Gleneagles area; they wanted to incorporate a sustainable building approach. To meet the client's objectives, the project team applied an integrated design approach to this unique facility that contains a gymnasium, community living space, a fitness centre, an art centre, childcare

facilities, as well as administrative spaces. Recognized by the American Institute of Architects with an Award of Excellence for Sustainable Design, the Gleneagles Community Centre brings together mechanical, structural and electrical elements in a pleasing 23,000-square-foot architectural framework. The team took a holistic approach in creating a facility that delivers a healthy and comfortable environment for its visitors and staff, while minimizing its impact on the environment.

The engineering elements that stand out as leading examples of environmental protection are in the structural and mechanical areas. With financial infrastructure constraints, the effects of global warming and International Emission Control Agreements being introduced, governments at all levels are providing the direction to reduce CO₂ emissions and lower operating costs. The engineering industry is reacting in a positive manner by considering new and/or proven international alternative methods to conventional building systems.

The Gleneagles Community Centre, completed in January 2003, uses a radiant slab climate control system that incorporates the Swiss "Batiso" (Batiment Isotherme) constant temperature building concept that combines a high performance building envelope with radiant slab cooling and heating, including displacement ventilation with air-to-air heat recovery heat exchangers for the dedicated outdoor air system. The sloping site and overburden redistribution allowed for the economical installation of a geothermal heat pump system located in the parking lot.

The building structure itself is used as part of the interior climate control system and acts as a huge thermal storage mass. The building structure functions as a giant heat pump. It absorbs, stores and releases energy throughout the building, thereby creating an extremely stable and robust indoor climate with virtually constant temperatures inside



the occupied spaces, regardless of the exterior climate.

The engineering and architectural teams worked together to integrate the mechanical, electrical and structural systems with the architectural design. Most of the mechanical systems are built in and are virtually invisible inside the building. The high efficiency mechanical systems and building envelope design led to a mechanical plant that is 40 percent of the size of a conventional HVAC plant, resulting in fewer and smaller equipment requirements. This means reduced material consumption and space requirements in the project.

In addition to the innovative approach for the mechanical system, the team applied innovation to the selection of materials used to deliver the specified system. The radiant slabs were constructed with a higher percentage of fly ash (26%), replacing some of the cement and thereby reducing the environmental impacts associated with cement production. The production of one tonne of cement is estimated to emit one tonne of CO₂ gas due to the calcinations of the raw materials and the combustion of fuels. This design element reduced CO₂ emissions by 1157 tonnes.

This project represents the first and only “Batiso” building currently operating in North America. Plastic tubing was cast into the tilt-up concrete wall panels, as well as the floor slabs and elevated structural floor slabs, through which warm or cool water is constantly circulated to maintain the interior space temperature by radiant heat exchange.

Benefits offered by the facility include:

- The energy use of the building is currently being tracked and is estimated to be at least 60 percent less than a conventional building system approach, which in turn reduces CO₂ emissions and provides low operating costs over the life of the building.
- The exposed concrete walls and floors are also the finished interior surfaces, thus reducing the total materials used on the project, and lowering the buildings VOC level (Volatile Organic Compound), thereby improving the comfort and well being of its occupants.
- The building roof drainage and hard surface stormwater runoff is used as a “designed water feature”, collected by a fountain in the plaza of the building. The overflow from the

fountain and the possible runoff from the gravel parking lot is directed to a bio-swale. This system then flows into a wetland in the neighbouring golf course, and eventually feeds into Larson Creek, a local salmon bearing stream.

- The large soffit design provides the solar protection for the exterior glazing.
- Skylights and clerestory glazing provide natural lighting to areas that would normally be illuminated with conventional lighting systems.
- Energy-efficient light, multiple switching options and occupancy lighting sensors provide a reduced energy demand.
- Low flow plumbing fixtures throughout the facility minimize potable water use.
- Radiant slab system has a low energy consumption (typically 50%-60% less than a conventionally heated and cooled facility).
- Renewable ground source energy serves as the main heating and cooling source for the building.

Innovation equals success in Fort McMurray

In 1999, Earth Tech was retained by Alberta Transportation to undertake the functional planning, detailed design and construction supervision for an interchange at Highway 63 and King Street in Fort McMurray, Alberta. The solution that Earth Tech developed to address the safety and traffic operation issues was to construct Canada’s first modern roundabout interchange.

The engineering team evaluated several alternatives in the functional planning phase and recommended a new design rather than the concepts from previous studies. Project Manager **Paul Bassi** and his team were able to:

- increase weaving distances by widening existing bridges as opposed to constructing separate structures as previously proposed;
- minimize impact on the adjacent park space with the roundabout design;
- reduce potential traffic noise by lowering highway profiles;
- enhance safety and improve traffic flow; and
- reduce the overall project cost by 20%.

Although similar to traffic circles, modern roundabouts are safer, can handle higher traffic volumes and generally have a smaller footprint. However, conveying these differences to drivers was a challenge, as traffic circles have proven unpopular and intimidating to drivers in other locations. “We were expecting we’d be fighting an image problem at first,” Bassi admits, “but the tools we used – traffic simulations and a 3-D computer animation based on the design drawings – seemed to really make a difference. The comments we received from the client, the local municipality, and the public were supportive of the design.”

This initial positive reception has been supported by the habits of drivers, as operations at this new interchange have improved dramatically since its opening in July of 2003.

To obtain a copy of the project data sheet, please contact **Brad Ledig** in the Edmonton office at 1-866-929-9090 or brad.ledig@earthtech.ca



Winnipeg office: Our people, our projects, our community

Winnipeg is home to a dedicated and talented group of engineering consultants and client service staff who have served the many businesses in the area for several decades. At present, the office consists of seventy-five employees who provide professional services to a number of different sectors including Transportation, Environmental, Water/Wastewater and Facilities.

The Transportation group is led by **Todd Smith** who has been with Earth Tech for 15 years. His primary focus includes transportation planning, traffic engineering, functional and detailed design of rural and urban streets and highways, as well as traffic impact studies, parking studies, transportation facility planning, roadway and intersection capacity analyses and functional planning.

The projects keep on coming

One of the projects undertaken by the Transportation group was the Netnak Bridge to Cross Lake. Beginning in 2002, construction for this 260-meter bridge, with 6 km of new road, was designed to replace the existing seasonal ferry service and temporary winter ice road. The roadwork design required rock blasting and excavation to provide material to fill swamps and bogs, as well as the bridge design needed to withstand the high ice loads of the Nelson River. The Nelson River had water depths of up to 18m at the bridge site, the bedrock was a very hard basalt/granite, and the ice thickness of up to 1m resulted in a tremendous load on the tall bridge piers. As a result, a unique foundation system was developed by Earth Tech to minimize the effects of the ice, minimize both risk and cost during construction, and provide the necessary stability for the structure.

Earth Tech is scheduled to begin work on the recently awarded Thunder Bay UV Disinfection and Cogeneration Facilities. The City of Thunder Bay is currently expanding and updating the Atlantic Avenue Water Pollution Control Plant (WPCP) and would like to add additional components of UV Disinfection and Cogeneration. **Ray Bilevicius**, Leader of the Water/Wastewater Group, will be the project manager and is

committed to its successful completion. Ray has 17 years of experience in environmental and civil engineering projects and specializes in potable water treatment process selection and design.

Award winning work

At the recent Consulting Engineer's of Manitoba (CEM) Awards reception, the office received an Award of Merit for its work at the Simplot Canada Ltd. Potato Processing Plant. The project manager, **Myron Paryniuk**, is Principal Engineer in the Winnipeg office responsible for industrial clients in the food and beverage, manufacturing and process sectors. Earth Tech partnered with Stuart Olson Limited and Fisher & Sons Limited to successfully design and construct the facility for the owner. The capital work for this project included development of the civil works for the 40-acre site and development of a 300,000-square-foot potato processing facility. The facility was designed and constructed on budget and ahead of schedule.

The Winnipeg Office was also recognized by CEM for innovation in design, receiving an Award of Merit for the steel-free deck design and instrumentation work completed on the Red River Bridge on Provincial Trunk Highway No. 101. Completed as a demonstration project for Manitoba Transportation, Earth Tech, in conjunction with ISIS Canada and Vaughan Load Supporting Structures Inc. (VLSSI), designed the deck, sidewalk and traffic barriers in one of the simple spans as "steel-free", utilizing fibre-reinforced polymer. The design involved the development of an integrated structural health monitoring (SHM) or Civionics system for the steel-free span, with the purpose of providing continuous and independent "real-time" data relating the actual loads on the bridge to the performance of the monitored components. **Eric Loewen**, the project manager for this bridge, was also the recipient of the Association of Professional Engineers and Geoscientists of Manitoba (APEGM) 2004 Early Achievement Award. This award is 'designed to bestow distinction on young outstanding engineers and geoscientists in this country and to recognize exceptional achievements in their chosen fields'.

A great relationship with Manitoba Hydro

Earth Tech is currently providing mechanical and electrical services to Manitoba Hydro for their new office building to be constructed in downtown Winnipeg. The proposal team is representative of Earth Tech's ability to mobilize resources from across the country to meet



Simplot Potato Processing Plant, Rural Municipality of Portage la Prairie, Manitoba

the client's needs. The team includes **Alan Aftanas** and **Neil Klassen** (Winnipeg), **John Munroe** and **Chris Saunders** (Calgary) and **Michael Shewchuk** (Edmonton). Neil Klassen comments: "Manitoba Hydro agreed that Earth Tech was the company they could work with to provide an integrated design approach. We started to prepare for this project on the day the announcement was made, in 2001, that Manitoba Hydro had purchased Winnipeg Hydro and the office building was part of the deal. Prior to the proposal opportunity, Earth Tech submitted an unsolicited presentation to Manitoba Hydro on sustainable design services and the Integrated Design Process (IDP). Shortly after that presentation, Manitoba Hydro decided to move forward with the IDP approach for their new office tower". Klassen also adds, "Our longstanding relationship with Manitoba Hydro has allowed us to become very familiar with their standard practices, and our strong understanding of their business has resulted in successful technical decisions on our client's behalf". Earth Tech is proud to be part of Manitoba Hydro's "hand-picked team to create a world class energy efficient signature building."

As determined as the Winnipeg office is to get through the cold and snowy days of winter each year, it is equally determined to expand its resources and technical expertise and provide ongoing superior service to ensure its clients' needs and business objectives are met year after year.

For further information on the services of the Winnipeg office, please contact Office Manager **Albert Li** at (204) 926-1155 or albert.li@earthtech.ca. Albert has 26 years of engineering experience and specializes in the planning, design and construction of large water and wastewater pumping and treatment facilities.



**Red River Bridge:
Stainless Steel
Studded Anchors
for Traffic Barriers**



**Red River Bridge:
Fibre Optic Sensors for Structural
Health Monitoring System**

Commitment to the community is a big part of the Winnipeg office philosophy with annual fundraising initiatives to support the United Way. As well, they contribute to the Christmas Cheer Board and every year, Earth Tech staff sponsor a number of families through donations of food and gifts. The office also participates in the Manitoba Marathon, which usually takes place in June, and last year, they tied for 15th place out of 541 relay teams.



Earth Tech builds on a winning cause

Earth Tech's Calgary office met the challenge of designing and building a structure out of non-perishable food items for the APPEGA National Engineering and Geoscience Week 2004 Food Structure Challenge.

This was a great opportunity for staff to get together as a team and use their creativity to help out a good cause. A 50/50 draw was held in order to raise money to buy the cans of food that would be used to design and build the structure. The team decided to build a replica of the Calgary Tower, which would eventually take shape in the front foyer of the Calgary office. Like any good business unit, some time was spent thinking about the design and then teamwork set in and the tower was built. It took a few modifications to replicate the tower but in the end, it was a successful likeness.

The structure was taken down after a week and all 268 cans were dropped off at the local inter-faith food bank, where they welcomed Earth Tech's generous donation.



Earth Tech gives a "Healing Hand"

Every year, Earth Tech Canada's Windsor office donates copies of the "Healing Hands Busy Book" to the children at Hotel Dieu Grace Hospital. This year was no exception! The donation ensures that the children will be able to enjoy this book which is filled with games, puzzles, short stories and other activities and information to lift their spirits during their difficult hospital stay.

"Healing Hands" is designed especially for sick or injured children who stay in local hospitals and is funded entirely by community businesses like Earth Tech Canada. With the help and support of businesses like Earth Tech, "Healing Hands" has been able to make these books available to over 800 health care facilities in North America.

For more information on "Healing Hands Busy Book" and how you can help put a smile on a child's face, please visit www.healinghandsbusybook.com

Earth Tech raises money for Jesse's Journey FUNdraising Friday

In 1995, John Davidson set out to push his 15-year-old son Jesse, who had been diagnosed with Duchenne Muscular Dystrophy (DMD) in a 3,300 kilometre, 124-day marathon across Ontario to raise money for Duchenne MD research.

Inspired by John's efforts, Liz Kain, a mother of a boy with DMD, hosted a barbecue in April 1998, which she called FUNdraising Friday to raise money for Jesse's Journey. Over the years, many schools and businesses have become involved in this event including Earth Tech Canada.

Earth Tech's London Office has been participating in FUNdraising Friday since 2001. In the past, the office has successfully organized bake sales and indoor golf tournaments to raise money in support of this cause. This past April, Earth Tech raised \$1,000 by hosting a raffle where items were donated by staff members.

Jesse's Journey – The Foundation for Gene and Cell Therapy, focuses on funding research that will lead to treatment and eventual cure for Duchenne MD.

For further information on Jesse's Journey and how you can participate, please visit www.jessesjourney.org or call (519) 645-8855.

employee commitment

Congratulations to **Mark Bagnall** for successfully achieving the status of a Certified Engineering Technologist (CET), in the discipline of Civil, with the Alberta Society of Engineering Technologists (ASET). The achievement of this internationally recognized professional credential is a significant step in Mark's career and reflects positively on Earth Tech's commitment to maintaining high-quality, competent and technical professionals. In the Fall of 2004, Mark will be returning to school to pursue an engineering degree.

Earth Tech is involved in many recruitment and co-op programs throughout the year to bring the best and brightest talent to the Earth Tech team. Recently, **Erin Mahoney** – Vice-President, Central Region – visited the University of Toronto and took part in an exclusive Civil Engineering lunch hour seminar series where she spoke to students and faculty. The objective was to inform students about Earth Tech Canada, its employees and projects, as well as the careers available for students once they have finished their various programs.

Members of the Human Resource team also participated in a recruitment fair in February in Waterloo, Ontario where approximately 400 students took the time to speak with prospective employers about their education and career goals. The students attend various colleges and universities in Ontario including Guelph, Waterloo, Laurier and Conestoga College.

Currently, there are several staff members at Earth Tech who are participating in various internship programs.



Our employees are the core of our company and we would like to acknowledge the following individuals for their longstanding service to Earth Tech Canada:

years of service

15

Arthur James Albury (Markham, Ontario)
Mei Mei Chan (Markham, Ontario)
Dandy Cruz (Markham, Ontario)
Ken Delsnider (Calgary, Alberta)
Bradley Hallman (Kitchener, Ontario)
Leisa Krawchuk (Winnipeg, Manitoba)
David Mate (Vancouver, British Columbia)
Ilka McKenzie (Victoria, British Columbia)
Irene Mohamed (Markham, Ontario)
Doreen Munsie (Calgary, Alberta)
Chris Scopic (Regina, Saskatchewan)
Manel Wickramasinghe (Markham, Ontario)

20

Parmjit Grewal (Vancouver, British Columbia)
Thomas Richardson (Markham, Ontario)
Beverly Sadlak (St. Catharines, Ontario)

25

Marian Perry (Markham, Ontario)

30

Walt Empey (Edmonton, Alberta)
Richard Henderson (Edmonton, Alberta)
Dale Rockel (Markham, Ontario)
Steven Yick (Markham, Ontario)

35

Lyle Taylor (Calgary, Alberta)

Earth Tech is a global provider of consulting, engineering and construction services for the transportation, water/wastewater, facilities and environmental markets. Serving commercial, industrial and government clients worldwide, the company employs 8,500 people in over 130 offices in 17 countries. As part of Tyco Engineered Products and Services, Earth Tech combines its technical expertise with the resources of other Tyco businesses to provide turnkey project solutions, including financing, for its clients around the world. Earth Tech is headquartered in Long Beach, California.

Sustainable Solutions for a Changing World

Your business is constantly changing. Solutions need to be effective not only for your company's needs today but also for tomorrow's changing environment. At Earth Tech, we believe that the only solution is sustainability. We provide fully integrated engineering and consulting services across Canada, the U.S. and globally. Our unparalleled experience and expertise is demonstrated on every project we undertake to provide our clients the most effective and efficient solutions for today's needs and tomorrow's vision.

Our mission is to continue national leadership within our industry by setting the standard for quality, client-focused solutions through teamwork, technical and management excellence, and our dedication to the professional development and advancement of our people.



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