



## Beaufort Pumping Station and Reservoir Expansion

FEATURE PROJECT

### Project Requirements

Kenaidan is currently constructing a new pumping station and reservoir located south of Dundas Street and north of Beaufort Drive in the City of Burlington. The project was tendered in May 2016 and awarded to Kenaidan in July 2016. Halton Region is replacing the existing reservoir and pumping station (constructed in 1974), to meet operational requirements for the existing service area, improve the security of water supply to customers, and provide additional capacity to service growth areas in Burlington to the year 2031.

The pumping station building is designed in “heritage home” style architecture to fit into the surrounding up-scale neighbourhood. The new pumping station will be rated at 63 L/s to meet the required flows for Burlington Zone 5 and future upgrades. The new reservoir, located slightly to the east of the existing one, will have a total operational volume of 6 ML. It will be concealed and integrated into the natural landscape of the surrounding area. The work also includes related watermain work.

In order to mitigate the impact to the neighbouring homes, and protect a mature tree line, a new microtunnelling process is being used to install a new 500 mm and 250 mm watermain within a narrow 3.0 m-wide easement. The microtunnelling process used on this project is different from the typical process. This dry system takes up less space and allows for work to be completed much quicker. It is also more environmentally friendly than traditional methods as it does not use any water or chemicals to liquefy the soil.

Building Information Modeling (BIM) was used on this project for the coordination of the work plan, design clarification assistance, creation of pour break drawings, and concrete quantities. The use of BIM was also instrumental in finding a solution to the constructability problem of building a critical wall between the pump station and reservoir, thereby allowing the project to move ahead.

The project is progressing well and is scheduled to be complete by August 2018.

### Project Scope

**Contract Services:** Stipulated Lump Sum

**Concrete:** 3,238 m<sup>3</sup>

**Formwork:** 6,623 m<sup>2</sup>

**Key Challenges:**

- Installation of two new watermains through a narrow easement

- Tight space onsite making deliveries (in particular rebar), parking, and concrete pours, challenging
- Major changes were required to the design to comply with Burlington’s building permit requirements, as well as, major grading changes, the addition of fire rated exits and stairs, and modifications to services entry points

### Roles & Responsibilities

**Owner:** Regional Municipality of Halton

**Primary Consultant:** Parsons Corporation

**Excavation:** Blu-Mar Excavating & Grading Ltd.

**Site Services:** Atlantis Underground Services Ltd.

**Formwork & Concrete Finishing:**

M.J.R. Contractors Ltd.

**Concrete Supply:** Ontario Redimix, A Division of CRH (Canada) Inc.

**Reinforcing Steel:** Gilbert Steel Limited

**Masonry:** Bernel Masonry Ltd.

**Structural Steel & Metals:** BGL Contractors Corp.

**Roofing Systems:** T.Hamilton & Son Roofing Inc.

**Waterproofing:** Aquanorth Contracting Ltd.

**Curtain Wall & Glazing:** Barton Glass Inc.

**Process Mechanical & Plumbing:** Kenaidan Contracting Ltd.

**Mechanical:** Black & McDonald Limited (Heating and Ventilation)

Pro Insul Limited (Mechanical Installation)

**Electrical:** Lexas Electrical Inc.

(Electrical, Instrumentation, Controls, and Structured Cabling Systems)

### Team Kenaidan

**Project Director:** John Goffredo

**Project Manager:** Brett Latham

**Site Supervisor:** Jeff Bedard

**Project Coordinator:** Acer Almassraf

**Project Administrator:** Rachna Pathak

**Estimator:** James Smith

**Construction Surveyors:** Claudiu Ban, Valeri Zverev

**BIM Coordination:** Dorin Nita, George Moraru

**Mechanical:** Larry Dorman, James Parco

**Project Scheduler:** Hanna Yacoub

**H&S Manager:** Patricia Pereira

**Preconstruction:** Mark Nanfara, Ali Sohrabirehani

**Prequalification:** Andrea Howson



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#### OUR MESSAGE

Steve Fogarasi Retires



#### FEATURE CREW

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# Our Message: Steve Fogarasi Retires

After 23 years of service with Kenaidan, Steve Fogarasi announced his retirement in January 2017. His career was celebrated at a gathering held on February 2<sup>nd</sup>. Several of his Kenaidan colleagues, who worked with him throughout the years, were there to tell stories, reminisce, and show their appreciation for Steve's leadership and friendship.

Steve joined Kenaidan as our Chief Estimator in December 1993. He helped lay the foundation for many of the estimating processes and procedures that exist today. Steve is known for his thoroughness and tenacity to dig deep on issues, and never give up until a problem is solved. Hard work, dedication, and his competitive nature, resulted in many successful bids as the company went through a period of strong growth.

During his estimating career with Kenaidan, Steve contributed his technical knowledge and skills to many projects. One in particular that stands out for Steve is the R.C. Harris Water Filtration Plant.

The project involved the construction of a Residue Management Facility, designed to treat the backwash water produced in the filtration of lake water. Installed below grade on a 30 degree slope between two existing heritage structures, mitigating vibration and settlement were key challenges that were met by re-designing the traditional caisson wall shoring system. The new plan called for a lighter and safer system. Steve introduced a Continuous Flight Auger system to create piles without vibration, which also provided scheduling benefits, as well as a safer work environment.

As a leader, Steve's patient and diplomatic approach made him a good mentor and coach. Roman Halawa, now Vice President and Chief Estimator, joined Kenaidan and Steve's estimating team in 1995. "To me, Steve Fogarasi, through his everyday conduct, exemplifies a man of worth, whose work ethic and overall excellence are what I strive for. Steve led by example; he always demanded first from himself before demanding from others. He was the first to contribute and the last to seek recognition or reward."

"He was able to garner trust from so many people around him due to his marked humility, tactfulness and inordinate desire to do good under any circumstances. Steve was passionate about his work but always stayed calm and cool under pressure. His perseverance was so contagious that others had no choice but to abandon any thoughts of giving

up on their tasks," Roman Halawa.

Some might say his biggest achievement was his vision for the future. Steve transitioned from estimating to engineering eight years ago. Under Steve's leadership, Kenaidan developed and invested in an engineering department. Focused on improving services to clients, our engineering department provides engineering alternatives to the project team that provide cost, quality, and scheduling benefits. Materials, sequencing, logistics and constructability elements are all reviewed to assess if there are opportunities for improvement. This process is not conducted in isolation; communication and involvement from all project stakeholders is a vital element. Collaborating closely with owners and clients from the start, all parties have input on identifying potential problems and recommended solutions.

In his role as Vice President of Engineering, Steve's pragmatic approach and "can do" attitude helped distinguish Kenaidan in several successful engineering opportunities. He also became a mentor to Elia Rizkalla, now Engineering Director. "Without Steve's support and encouragement, it wouldn't have been possible to achieve and contribute as much as I do now. With his guidance and wise advice, I have learned great lessons that helped shape my career and professional life. He taught me that patience, persistence, working smart and hard make an unbeatable combination for success. Also, construction is a combination of a touch of science and lots of practical knowledge and experience. Steve is a humble leader who led by example and is always motivated by success," Elia Rizkalla.

Steve's knowledge and experience was put to the test on the award-winning Weston Tunnel – Phase 3 Grade



Retirement party

Separation project. The Weston Tunnel contract consisted of lowering the rail corridor, constructing a 1.2 km long concrete structure, with ballast and base slabs, retaining walls, and walls supported by struts, including a concrete covered portion.

Working closely with Elia, their innovative approach was to design an alternative permanent gravity drainage system below the base slab with accessibility for monitoring, flushing and maintenance to prevent buoyancy. This new design also revised the concrete volume from 114,000 m<sup>3</sup> to 71,000 m<sup>3</sup>, and rock excavation from 145,000 m<sup>3</sup> to 120,000 m<sup>3</sup>. This system reduced the tight schedule by four months and also reduced the project cost.

Outside of the company, Steve has worked with the Tunneling Association of Canada, published several papers, and delivered presentations at the World Tunneling Congress.

Kenaidan is tremendously grateful to Steve for his 23 years of dedicated service. His strong work ethic, leadership and guidance combined with his technical expertise, enthusiasm, and passion has been applauded and admired by everyone who worked with him. He has left a lasting legacy on many projects and inspired so many people with his innovative thinking and problem solving. We wish Steve nothing but the best as he enters the next chapter of his life.



Steve and Roman



Steve and Elia



Steve and his wife Marta

## Environmental Corner: Hazardous Waste Information Network



By Derek Beharry

Did you know that all Kenaidan projects are registered to the Hazardous Waste Information Network (HWIN)? HWIN is an online generator registration and manifesting system for generators, carriers, and receivers of subject waste.

As per Regulation 347 of the Environmental Protection Act, Kenaidan projects are considered "generators,"

which means we are the owner in charge. When managing or controlling hazardous waste for our projects, we should be aware of the following:

- Hazardous waste generated by subcontractors can be managed by the subcontractor, but it is our responsibility to ensure that the disposal of hazardous or liquid industrial waste is being managed according to the requirements of the regulations.
- Removal of hazardous or liquid industrial waste can only be done by a licensed third-party transporter. As the "carrier," the third party transporter will pick up the waste from the site, and provide the site with a waste manifest document (green and white copy) before taking it to a registered waste disposal facility ("receiver"). The green copy is maintained on site for their records, and the white copy is submitted to the Ministry of Environment and Climate Change (MOECC).

As a registered site, an automated generator number is provided for that site's address. It is used to provide the government with a record of who creates hazardous waste, what hazardous waste was generated, and where and how the waste was generated. It is a tracking tool that can also be used to provide waste generators with a resource for waste generation, removal information, and fees, as well as, a convenient way of paying fees online. This requirement is a law that falls under Regulation 347.

The MOECC started manually tracking hazardous and liquid industrial waste in 1985. The online system was launched in 2002. Previously, if a project or facility had to remove hazardous or liquid industrial waste from its site, the waste could not be shipped until the MOECC acknowledged the registration and assigned a generator number. This process typically took up to six weeks and now it takes only 30 minutes.

The HWIN registration, valid for one year with a \$50 fee, is renewed on or before February 15<sup>th</sup> of each year. There is a \$5 cost for each manifest used, plus \$30 per tonne for the transfer or disposal of hazardous waste. Before renewing each year, all fees have to be paid for the previous year and once a project is complete. The HWIN account for that site has to be closed in the system and designated as no longer active.

Hazardous wastes most commonly generated from construction activities may include:

- leftover paints
- adhesives
- caulking
- wood preservatives or other chemicals
- soil
- used oil and oil sludge
- older materials, such as solvents, which have exceeded their shelf life
- demolition waste, such as:
  - insulation
  - light bulbs
  - painted wood and piping
  - drywall
  - compounds that may contain hazardous materials, such as asbestos, PCBs, mercury, and lead.

All of these wastes must be classified and disposed of properly as hazardous wastes under Regulation 347 using the HWIN system.

Lastly, as per the regulation, used oils and solvents cannot be kept on site longer than three months. In the event that not enough is generated on site to make a three-month pick up practical, the MOECC form "Notice of the Storage of Subject Waste," must be completed and submitted to the District Office. This form will allow used oil and solvents to be stored on site for a longer designated time period until the quantity increases, warranting proper disposal.

# Kenaidan Women's Leadership Network

## POINT OF INTEREST

Over the last 14 years, Kenaidan has focused on developing our staff from within. One of the reasons for doing this is the fact that there is a shortage of qualified men and women at the mid-to-senior level in our industry.

The initiative to grow our staff from within has allowed us to identify co-op students who will eventually become new Kenaidan hires after graduation. Although our program has been successful, and many of our graduate hires have advanced their careers with Kenaidan, we are falling short on attracting women to our applicant pool. In fact, only a quarter of all applicants for co-op positions are women. Even though the number of women entering engineering programs has increased, the majority of them have their sights set on the design or consulting side of our industry. At Kenaidan, 11% of our operations staff are women.

The business case for increasing the number of women in our ranks is twofold. With the current growth of our industry, the demand for qualified people will continue to increase, and as we have seen, women bring a different perspective to communication, decision making, and relationship building that can enrich our project teams.

In 2013, we began to formally organize around this issue and sent a small group of women to universities and colleges to promote Kenaidan to female students. Our goal was to increase the number of female applicants for our co-op positions. Unfortunately, this did not materialize. We found that many young women had already decided on the direction of their career by the time they entered college or university.

In November of last year, a larger group of women from Kenaidan met to discuss this issue and form the Kenaidan Women's Leadership Network. The goals of the group are:

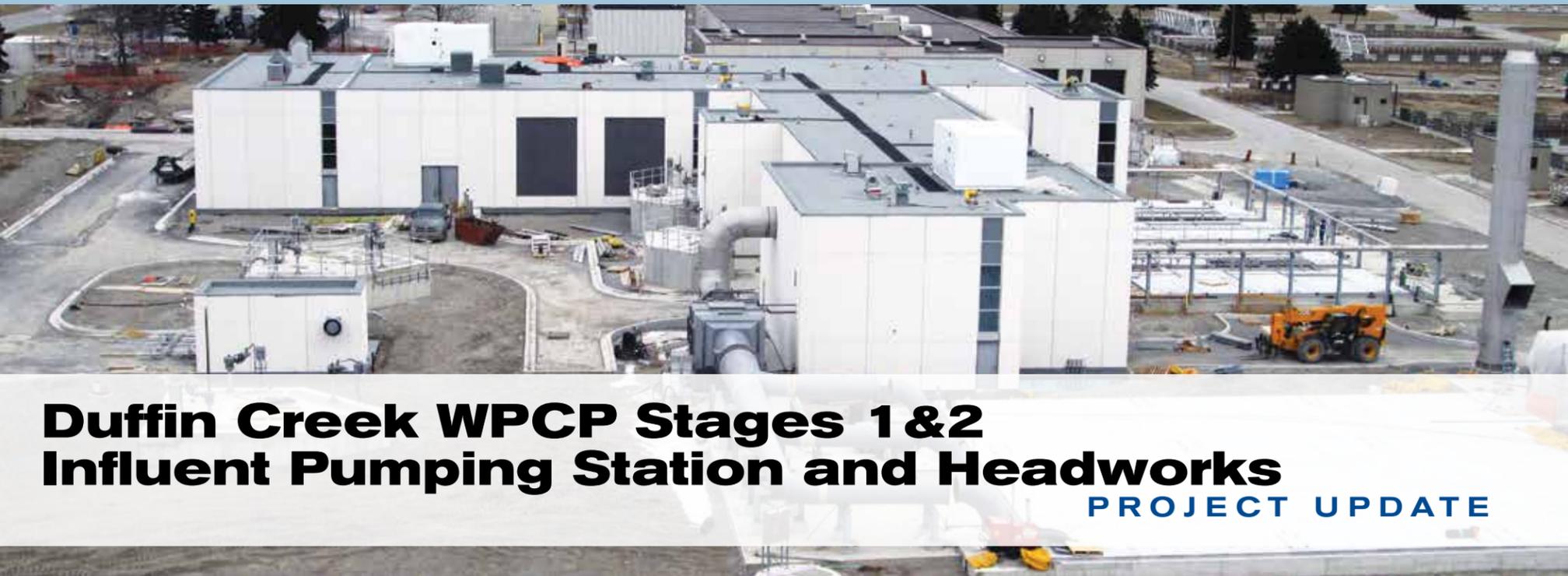
1. To develop and deliver presentations to grade 7, grade 8, and high school students about careers in construction, including a focus on the skilled trades.
2. To create a mentoring program to support young women coming in to field-based positions in the company.

We have organized three sub-committees around the presentation to schools initiative: one to focus on

identifying opportunities to speak at various schools, one to design and develop the presentation, and another group that will deliver the presentations. Many of the presentations will be targeted to both boys and girls. By having women deliver these talks, we hope that young girls can see the possibilities and rewards that a career in construction can bring.

The mentoring initiative is underway with four mentoring relationships set up through this program. Our goal is to assist young women with their transition into the company and the industry.

We have also started discussions with other general contractors and industry colleagues about setting up their own Women's Leadership Networks. We will be sharing the presentations we develop, and support them to go out and deliver these as well. With the involvement of more companies, we hope to have a wider reach in getting the message out. Down the road, we will also be looking at sharing best practices with our industry colleagues on mentoring for women, and also around systemic issues that may create barriers for the advancement of women in our industry.



# Duffin Creek WPCP Stages 1 & 2

## Influent Pumping Station and Headworks

### PROJECT UPDATE

### Project Requirements

The Duffin Creek Water Pollution Control Plant (WPCP) is a critical component of the York Durham Sewage System. Jointly owned by The Regional Municipalities of York and Durham, this plant serves the water pollution treatment needs of Aurora, Newmarket, Vaughan, Richmond Hill, Markham, Pickering, and Ajax. This plant currently has the capacity to treat an average of 630 ML/day.

To meet the growing needs of both regions, the plant has undergone significant expansion over the years. The scope of this contract requires construction of an influent pumping station, preliminary treatment building, flow metering building, and electrical building. The work also includes a biofilter odour control system, phosphorus removal system, flow control chambers, channels, as well as site services, duct banks, aerated grit tanks, electrical system, instrumentation and controls, and other mechanical and process systems.

The cast-in-place concrete work involved a total of 32,000 m<sup>2</sup> of formwork and 17,000 m<sup>3</sup> of concrete. Kenaidan self-performed the concrete package in addition to the building and process mechanical installation works.

To date, approximately 99% of all concrete work has been completed for both the Influent Pump Station (IPS) and the Preliminary Treatment Building (PTB), with only two stairs, toppings, grouting, and some rub-up work still remaining. The majority of the site has also been backfilled to grade with most of the curb and asphalt paving completed.

Exterior architectural items including roofing, windows, doors and frames, and overhead doors have been installed. The IPS and PTB buildings are now closed in with painting and interior finishes well underway.

Landscaping activities were completed late spring. All major equipment has been delivered to the site including the owner-supplied raw sewage pumps. Installation of major mechanical and electrical systems are nearing completion. Commissioning activities are underway and

10-day wet testing took place in early April. This kicked off substantial performance for the project.

Construction began in June 2014 and is scheduled to be substantially complete in late May or early June 2017.

This project is part of the ongoing expansion of the existing plant where Kenaidan recently completed the Stage 3 Influent Pumping Station and Stage 3 Dewatering and Incineration facilities.

### Project Scope

**Contract Services:** Stipulated Lump Sum

**Concrete:** 17,000 m<sup>3</sup>

**Formwork:** 32,000 m<sup>2</sup>

**Design Features:**

- Temporary secant shoring systems
- A 22 m diameter by 30 m deep influent pump station with two interconnected wet wells, equipped with eight submersible pumps, each rated at a capacity of 2,093 L/s
- Preliminary treatment, complete with screening system, grit removal, aerated tanks, and displacement blowers
- Biofilter odour control system rated 19.7 m<sup>3</sup>/s
- Phosphorus removal system, complete with chemical tanks and dosing equipment

**Key Challenges:**

- Coordination of owner-supplied equipment deliveries and commissioning
- Construction scheduling and methodologies for effective tie-ins to the existing plant with minimal interruption to daily operations
- Complex resource-loaded project scheduling
- Secant shoring and deep excavation into rock at the influent pump station
- Coordination with other adjacent active contracts and contractors

### Roles & Responsibilities

**Owner:** The Regional Municipality of York

**Design Consultants:** Team Duffin - which consists of CH2M Hill Canada and AECOM

**Concrete Formwork & Placement:** Kenaidan Contracting Ltd.

**Process & Building Mechanical:** Kenaidan Contracting Ltd.

**Secant Shoring:** Deep Foundations Contractors Inc.

**Excavation & Backfill:** Gentile Contracting Ltd.

**Yard Piping:** Clearway Construction Inc.

**Rebar:** Gilbert Steel Limited

**Architectural Precast:** Northern Precast Inc.

**Concrete Supply:** Ontario Redimix, A Division of CRH (Canada) Inc.

**Waterproofing:** Southwest Waterproofing and Coating Inc.

**Odour Control & Building HVAC:** Black & McDonald Limited

**Mechanical & Process Insulation:** Pro Insul Limited

**Electrical:** Lexsan Electrical Inc.

### Team Kenaidan

**Project Director:** John Goffredo

**Project Manager:** Ryan DeJonge

**Assistant Site Supervisor/Mechanical Supervisor:** Kevin Gomes

**Project Coordinator:** Maurice Wong

**Project Administrator:** Sandra Piccini

**Foremen:** Luke Walsh, Tony Correia

**Field Engineer:** Andrei Horga

**Project Scheduler:** Hanna Yacoub

**Project Engineer:** Nick Cacciaccaro

**M&E Coordinator:** Pasquale Parente

**M&E Foreman:** David Lucyk

**Health & Safety Advisor:** Arthur Musisi

**Preconstruction:** Yolanda Banks

# Our Company, Our People

ROAMING PHOTOGRAPHER



## Corbett Creek WPCP – Digester Facilities Upgrades

FEATURE CREW

(L to R): Erik Baker, Tyler Peyton, Anthony Clark, Ron Hamersma, Cody Westerdyk, Justin Hamersma, Bruce Sloan, Steven Smith, Jonathan Rossi, Marcel Gagnon, Arthur Musisi, Elisa Lui, Kasra Banis  
Absent: John LeClair, Carl Johnson, Anthony Cipolla



Tony Melo and Mieczyslaw Wyszynski working on the Guildwood GO Station project at the North Entrance



(Front to Back) Darrell Squires, Alex Webb, Tom Butler, and Ron Young prefabricating PERI panels for the equalization tank walls at the Waypoint Wastewater Treatment Plant Upgrade project



2017 Triathlon, 25<sup>th</sup> Anniversary. *Front Row:* Greg Stack, Elia Rizkalla, Marilyn Smith, Hiro Kawasaki, Katelyn Stack, Courtney Quinton, Alysia Carter, Kathleen Boyd, Chris Kodama *Second Row:* Chris Yeung, Saad Mahmood, Rida Abdullah, Harpreet Khachh, Claudiu Ban, Marisa Nardini *Third Row:* Mark Nanfara, Brian Jorge, Bob Saunders, Barry Bince *Fourth Row:* Ali Sohrabirehani, Paula Oake, Dorin Nita, Josephine Lam, Arslan Khan *Fifth Row:* Teruo Nakaoka, Roman Halawa, Andrea Howson, Kyle Irwin, Oxana Kirichenko *Sixth Row:* Tyler Hamalainen, Geoff Bernardi, Jeffrey Leung, Aidan Flatley *Back Row:* Alan Pringle, Archie Yu, Peter Sullivan, Rupen Patel, Arthur Musisi *Absent:* Mark Guina, Jessica O'Laughlin, Bill McLeod, Pritesh Patel

### Contributing Editors:

Brett Latham  
Jeff Bedard  
Steve Fogarasi  
Roman Halawa  
Elia Rizkalla  
Deb Fillippe  
Ryan DeJonge  
Kevin Gomes  
Kathy Serman  
Jakub Schabowski  
Marisa Nardini  
Andrea Howson

### Kenaidan Welcomes

Iris Ilic, Payroll & Benefits Coordinator  
Markus Hahn, 3D Construction Modeler  
Andrew Davies, Senior Estimator  
Ali Sohrabirehani, Preconstruction Coordinator

### Congratulations To

James Parco on his promotion to Mechanical Project Manager  
Mike Limoges on his promotion to Senior Site Supervisor  
Mitchell Ramberg for obtaining his Gold Seal Designation for Journeyman Plumber  
Katelyn Stack on her promotion to Project Engineer  
Andrei Horga for obtaining his P.Eng Designation  
Lakpriya Ekanayake on his promotion to Senior Mechanical Estimator

### Upcoming Events

Kenaidan's Partnering Party, June 15<sup>th</sup>, 2017

### Corporate Donations

Kenaidan recently made donations to:

- Kids Up Front Foundation
- Alzheimer Society of Canada
- Hamilton Burlington SPCA
- Heart and Stroke Foundation of Ontario
- Big Brothers Big Sisters of Peel
- Water Environment Association of Ontario

### Charitable Matching Program

Kenaidan has recently matched employee donations to the following charities:

- SickKids Foundation
- Plan International Canada



### Kenaidan's Mission Statement:

- To provide responsible, quality construction services utilizing superior innovation and expertise.
- To develop and maintain long-term relationships with satisfied clients and suppliers.
- To create a safe, challenging and enjoyable work environment where employees share in corporate growth and success.
- To build on a sound financial base where future development is promoted over short-term gain.



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