

As part of our environmental initiatives, Kenaidan will be moving to an electronic-only version of our Team Kenaidan Newsletter. To subscribe, please email newsletter@kenaidan.com.

Waypoint WWTP Upgrade

FEATURE PROJECT



Project Requirements

The Waypoint Wastewater Treatment Plant (WWTP) is located on the southeast tip of Georgian Bay in the Town of Penetanguishene, Ontario. The project involves construction of a new WWTP, with an average daily capacity of 565 m³/day, which will service the Waypoint Centre for Mental Health Care. Upon completion of the new facility, decommissioning and selective demolition of the existing Waypoint WWTP will commence.

The new plant includes a headworks facility, two sequencing batch reactors for secondary treatment, sand filtration and ultraviolet (UV) disinfection. The existing aerobic digester will be upgraded with a new interior waterproofing application, internal diffuser assembly, and digester building. The digester building will house new blowers, thickened waste activated sludge pumps, and a digester load-out. The scope also includes upgrades to the outfall, involving slip-lining the existing discharge line, extending it approximately 30 m further into the lake, and incorporating a new diffuser assembly.

Ancillary equipment includes blowers for both the sequence batch reactors and digester tank, compressed air systems for control of the decanter mechanism and backwashing of the tertiary filters, alum feed system for thickening, odour control in the headworks, and sampling systems.

"The new wastewater treatment plant currently being constructed by Kenaidan will provide safe and reliable treatment of the wastewater generated by the Waypoint Center for Mental Health before discharge to Georgian Bay," said Douglas Callan, Senior Project Manager, BGIS. "The new facility brings the level of treatment of the wastewater up to 2017 standards and includes a new, completely automatic control system to facilitate the operation of the plant. Once operating, the plant will contribute to improving and maintaining the excellent water quality in Georgian Bay, an area used extensively for recreational activities by both cottage owners and locals."

"As project managers, we are happy to see a well-run and very clean construction site. Kenaidan can be proud to contribute to the success of this important environmental infrastructure project."

One challenge on this project was that the size and orientation of the selected equipment required a change to the original design layout. To change the equipment layout within a set building size, the piping arrangement had to be reconfigured. With buy-in from the consultant, we provided a new layout for the digester building, specifically the routing of the sludge piping. The revised piping accommodated the pumps and the surge relief valves, and allowed us to accurately spool the pipe and fittings which ultimately increased the efficiency of installation.

Kenaidan is self-performing all concrete and formwork, as well as all mechanical installations. The project was awarded November 8th, 2016 and will be completed by January 2018.

Project Scope

Contract Services: Design Bid Build

Concrete: 1,158 m³

Formwork: 2,448 m²

Key Challenges:

- Maintaining operations of the existing plant
- Short duration schedule
- Environmental restrictions due to the bird and turtle nesting season (Apr 15 to Aug 15)
- Work in a Northern climatic area / weather schedule impacts; the location is subject to extensive snow accumulation and road closures during winter months, making scheduling challenging
- Installation of by-pass piping prior to lake freezing
- Excavation and installation of outfall piping during winter months with a low water level

Roles & Responsibilities

Owner: Infrastructure Ontario

Owner's Representative:

Brookfield Global Integrated Solutions LP

Consultant: WSP Canada Inc.

Concrete Formwork & Placement:

Kenaidan Contracting Ltd

Mechanical: Kenaidan Contracting Ltd.

Geothermal Wells: Clean Energy Developments Corp.

HVAC: Teslin Contractors 2008 Limited

Pipe and Duct Installation: Pro Insul Limited

Excavation & Yard Piping: Connor Excavating Limited

Concrete Reinforcement: Gilbert Steel Limited

Waterproofing: Aquanorth Contracting Ltd.

Electrical: Selectra Inc.

Fencing: Pat Lalonde Fencing

Marine Works: Galcon Marine Ltd.

Team Kenaidan

Project Director: David Murray

Project Manager: Brett Latham

Site Supervisor: Mike Limoges

Mechanical Project Manager: James Parco

Plumbing Lead Hand 2: Rob Conlan

Site Foreman: Tom Butler

Senior Construction Surveyors: Claudiu Ban, Igor Melnik

Project Coordinator: Acer Almassraf

Estimator: Max Zhao

Project Administrator: Elisa Lui

Preconstruction Coordinator: Ali Sohrabirehani

Business Development: Marisa Nardini

(Prequalification)

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By Derek Beharry

New ISO 14001:2015 Standard for Environmental Management

ENVIRONMENTAL CORNER

In September 2017, Kenaidan successfully upgraded to the new ISO 14001:2015 standard during our semi-annual external audit with

BSI Management Systems Canada. Based on the results of the “Future Challenges for EMS Study Group”, which evaluated potential implications of evolving stakeholder expectations and new developments in Environmental Management Systems (EMS), the ISO committee began improving and updating the previous standard in 2012. ISO 14001 was originally launched in 1996, updated in 2004, and now updated again and officially released in late 2015. Currently, there are over 300,000 certificates issued to organizations worldwide.

When an ISO standard is updated, registered organizations have three years to upgrade to the new standard. This latest update is a result of the continuous efforts to ensure the standard is in line with current ecological, political, and social developments.

The main changes to the standard are related to:

- Increased requirements for top management commitment and involvement
- Emphasis on risk-based thinking
- Need to understand the context of the organization, the needs and expectations, and requirements of interested parties

- Consideration of a lifecycle perspective
- Emphasis on environmental performance

Leadership

(Increased requirements for top management commitment and involvement)

The EMS should be integrated with other business processes and compatible with the organization's strategy, so that decisions are made with consideration for the environment at all levels. This requires an increased role, commitment, and involvement by executive management.

Risk & Opportunities

(Emphasis on risk-based thinking)

There are three main sources of risk and opportunity: environmental aspects, compliance obligations, and other issues and requirements. These are identified on our Environmental Aspect Assessment tool during the project pre-planning phase for each of our new projects.

Organization Context

(Need to understand the context of the organization, the needs and expectations, and requirements of interested parties)

Internal and external parties to Kenaidan's operational business, with an interest in our environmental management system need to be identified. This includes identifying and understanding the relevant

needs and expectations of these parties. Examples of interested parties include: Owner/Client, public/local community, governing bodies, subcontractors, employees, etc. Some of the needs and expectations may be compliance obligations that are legal requirements or can be requirements that we can choose to adopt.

Lifecycle

(Consideration of a lifecycle perspective)

Where applicable and appropriate, environmental requirements will be included at the design stage and during procurement. Environmental impacts upon delivery and end use will also be evaluated to ensure environmental aspects are considered at each stage of the lifecycles – not just those relating to onsite activities.

Environmental Performance

(Emphasis on environmental performance)

There is a shift in emphasis with regards to continual improvement from improving the management system to improving the environmental performance of the organization. This will be achieved by identifying, monitoring, and measuring criteria and evaluating performance through the use of appropriate indicators.

We hope that with these key changes, Kenaidan will achieve the intended outcomes of its Environmental Management System.

Trafalgar & Derry Road Feeder mains – Highway 401 Crossing

POINT OF INTEREST

The Trafalgar and Derry Road Feeder mains and Zone 4 Reservoir project entails construction of two feeder mains (Part A) and a new 30 ML reservoir (Part B), both located in Milton, Ontario.

Construction of the reservoir is approximately 90% complete. The Derry Road Feeder main, involving the construction of approximately 3 km of 900 mm diameter watermain, is 80% complete. The Trafalgar Road Feeder main, involving the construction of approximately 3 km of 1,200 mm and 7 km of twin 900 mm water mains, is 60% complete.

Feeder main construction involves many major crossings including several watercourses, Highway 401, Regional Roads, CP rail line, and the Hydro One and Union Gas corridors. Extensive planning, coordination, and input from all stakeholders involved is required. The Highway 401 crossing is the most critical activity with the highest risk. The feeder main section crossing the 401 will be constructed using a tunnel boring machine (TBM) utilizing pre-cast concrete casings in which the twin watermain will be installed.

Currently, the TBM is located South of the 401 and is moving North towards Shaft 1-14, roughly 9 m below grade. Once the TBM reaches this location, the cutter head will be removed, inspected, and rebuilt with new cutting teeth prior to being re-launched for the 401

crossing. This will ensure that the TBM is ready for approximately 460 m of tunneling where it will complete the highway crossing at Shaft 1-15. Once the crossing begins, tunneling operations will run 24-hours a day until it is completed.

Prior to tunneling operations proceeding beneath the highway, there are two important items required:

- Completion of Shaft 1-15
- Installation of monitoring instrumentation

Completion of Shaft 1-15

Currently, Shaft 1-15 is being utilized by the tunneling subcontractor on site, Dibco Underground Ltd., as a muck pit to store excavated material. Prior to the crossing, this shaft will be emptied and all support utilities put in place.

Following completion of the 401 crossing, the TBM will be inspected and repaired once more before re-launching from Shaft 1-15 towards Shaft 1-16, located just North of Steeles Avenue. This tunnel will span over one kilometre and will meet an open-cut segment to be completed by Pachino Construction.

Installation of Monitoring Instrumentation

There are strict contract requirements for the installation of a monitoring system before tunneling operations can begin. These instruments, which take ground readings at

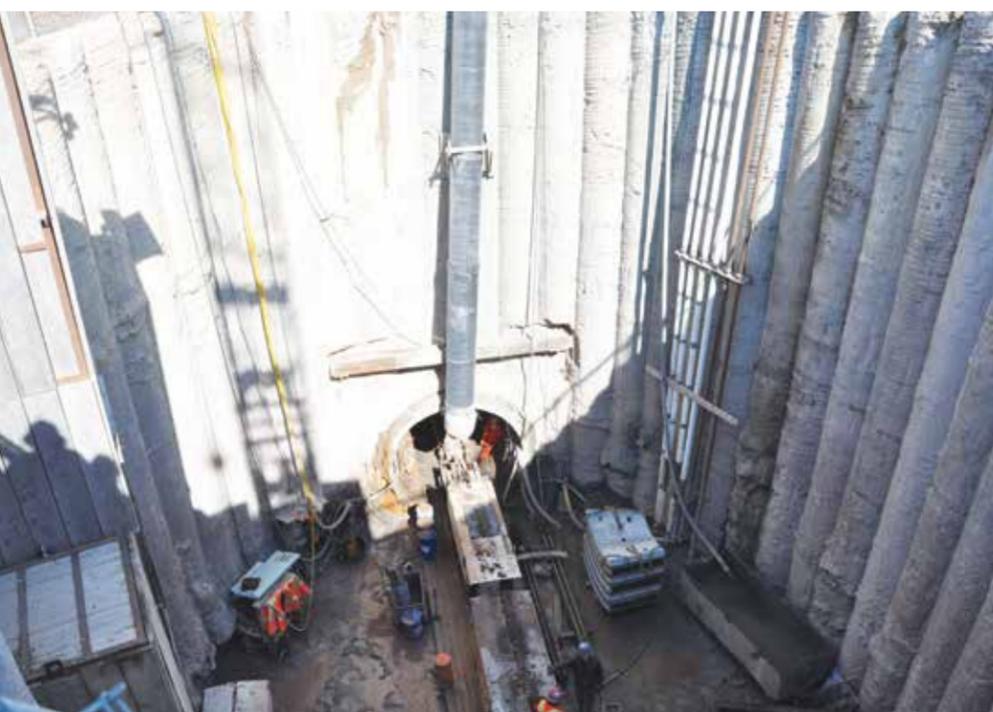
various intervals, are used to monitor ground displacement during construction to ensure that the tunnel is stable and that no major settlement occurs.

There will be a total of 60 monitoring points installed across the 401. Two types of monitoring points will be used: Surface Monitoring Point (SMP) and a Settlement Rod (SR).

The SMP is a hardened steel marker with an exposed convex head with a minimum diameter of 12 mm. It will be installed in arrays consisting of instruments installed at the proposed feeder main centreline and 3 m west/east of the proposed casing centreline. The SMP will indicate if the ground moves laterally in any direction.

The SR will be installed on the side slopes, toes of highway embankments, and along the centreline of the proposed feeder main. The SR consists of 12 – 18 mm diameter rebar encased in a PVC pipe used as a friction reducing sleeve. This assembly will be placed in a borehole approximately 1.5 m deep. The SR will indicate if the ground moves vertically in any direction.

Construction began in April 2016 and the contract is scheduled to be completed in January 2019. Work is progressing well and we look forward to reaching this project milestone.



Fred Ogden Retires

OUR MESSAGE

October 6th, 2017 marked the last day of work at Kenaidan for Fred Ogden, Labour Manager. His career was celebrated at a gathering held on September 6th at Kenaidan's head office. The event was marked by shared laughter and stories, honouring Fred's contribution and dedication to the company and our workforce.

Fred began his career at Kenaidan on May 23rd, 1996. Working as a Labour Foreman, his first project was the Ajax Water Treatment Plant, a milestone project for Kenaidan due to its complex scope of work. For the next ten years, he contributed to several waterworks and heavy civil projects, including two specialized slip-form projects: Blue Circle Clinker Storage Silos, and the New Air Traffic Control Tower at Pearson Airport. As he looked back on his time with Kenaidan, he remarked on both projects as he considered them to be career highlights.

Prior to Kenaidan, Fred had worked in the construction industry for 18 years. Growing up, he never thought of construction as a career path for himself. Being from Oshawa, he foresaw following in his father and brother's footsteps in the auto industry. After a brief six-day stint at the auto plant, he realized that wasn't his calling. He soon learned that construction provided him with the challenge and fulfillment he was looking for.

After working as a Foreman for ten years at Kenaidan, he was appointed as the Labour Manager. In this position, he managed our crew workforce that provides manpower services to our projects. He worked closely with the Health & Safety Manager and Site Supervisors in implementing our Health & Safety programs, and worked with our Human Resources department to determine training needs of the crew. Fred was instrumental in establishing the ongoing training programs that are in place for crew staff and created the Foreman in Training (FIT) Program which provides training and development opportunities for crew employees to move into leadership positions.

Fred played an important mentoring role to our crew by supporting apprenticeships and employees obtaining their Red Seal Certifications. He said he tried to provide the same support and encouragement he received from Aidan Flatley, CEO & Co-Founder, when Aidan challenged him to obtain his Gold Seal Certification in 2005. Fred considered this one of his biggest personal accomplishments and is grateful to Aidan for helping him achieve it.

"When I first met Fred in May 1996, he came across with an energetic and positive attitude. While Fred started out as Labour Foreman, we knew that he was capable of much more, and he knew that too. Fred proved that over the years, with his promotions and new roles that he performed at Kenaidan, he was a contributor to our success," said Aidan. "While he could be rough at times, there was always this part of him that was caring and concerned for other people's well-being. Fred, along with others, was a leader in taking CETA to the next level involving community projects that helped those in need. He was also committed to our safety program - whoever showed up for work in the morning went home safely at night. We have been very fortunate to have worked with him and I truly appreciate his dedication to Kenaidan. Good luck Fred and enjoy yourself. Keep in touch!"

We benefitted from Fred's leadership and passion for both the company and its employees. The smooth functioning of the crew on a day-to-day basis was evidence that Fred made them his priority. "I enjoy interacting with people, helping them, guiding them," said Fred smiling. "I really enjoyed watching them blossom and watching their careers take off."



Fred in action at the Strachan Grade Separation Enabling Works project.

In addition to his role as Labour Manager, over the last few years Fred has also been our CETA ambassador. CETA is defined simply by Caring Enough To Act and reaching out to intervene with issues or potential problems. CETA has an influence on our safety, environmental, and social responsibility programs. In 2010, Kenaidan launched our CETA Build program, to put our support and efforts behind community projects that impact and change the lives of families in need, a cause Fred deeply believes in. "CETA has forever changed me," said Fred. "One smile from one child, nothing is more rewarding." And he says retirement won't stop him from being involved in future CETA projects.

"I'm going to miss everything about Kenaidan. The people, I'll miss the people most," Fred remarked. "I'm thankful for the amazing support from every department right from day one."



Ribbon-cutting ceremony for the Tanglao family, a CETA Build project.



Fred, with his wife Judy, at his retirement party on October 6th. The crew presented him with a custom-made concrete table with a Kenaidan logo wood inlay.

"Fred has been a very dedicated employee for over 20 years, but we lose more than just that dedication and tenure. We also lose a good friend and colleague," said John Goffredo, Vice President, Operations. These sentiments are echoed by everyone who knew and worked with Fred.

In retirement, Fred is looking forward to spending more time with his family (wife Judy, children, and grandchildren), touring around on his Harley, and travelling.

All of us here will miss Fred for his guidance, expertise, and biting sense of humour, and we will never forget his contributions to Kenaidan. We thank him for his commitment, dedication, and most of all his passion. Please join us in wishing Fred all the best in his retirement.

Kenaidan Wins Silver at Canada's Safest Employers Awards!

SPECIAL ANNOUNCEMENT



Kenaidan is extremely pleased and honoured to be recognized as one of Canada's Safest Employers. The silver award, in the Building and Construction category, was presented to Kenaidan at the Canada's Safest Employers Awards Gala held on October 24th in Toronto.

Kenaidan is committed to ensuring that practical and effective measures are in place to protect the health and safety of all workplace parties. Our policy and program promotes the active participation of our organization, from senior management to each and every worker. This achievement reflects the dedication and commitment by Team Kenaidan to create and maintain a strong health and safety culture.

Launched in 2011, Canada's Safest Employers awards recognize companies from across Canada with outstanding accomplishments in promoting the health and safety of their workers. Companies are judged on a wide range of occupational health and safety elements, including employee training, OHS management systems, incident investigation, emergency preparedness, and innovative health and safety initiatives.

Our Company, Our People

ROAMING PHOTOGRAPHER



Team Kenaidan
FEATURE CREW

Team Kenaidan celebrating Kenaidan's Silver Award as Canada's Safest Employer



Andy Thomson and Jake Pitawanakwat pouring the gravity thickener at the Waypoint WWTP project



Gary Tripp stripping suspended slab tables in the reservoir at the Trafalgar and Derry Road Feeder mains project



Volunteer Week participants in the road hockey to benefit Canadian Breast Cancer Foundation

Contributing Editors:

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Donny DiZio
Chris Kodama
Bob Saunders
Marisa Nardini
Andrea Howson

Kenaidan Welcomes

Andy Dhargyal, Geotechnical Engineer

Upcoming Events

Kenaidan's Annual Christmas Dinner, Dance and Awards, December 9th, 2017

Congratulations To

Chris Kodama on his promotion to Labour Manager

Nick Cacciaccaro for his promotion to Assistant Site Supervisor

Pritesh Patel for obtaining his Gold Seal Certification for Estimator in General Contracting

Chrisie Park on obtaining her Canadian Certified Compensation Professional (CCP) designation

Alex Maini on obtaining his P.Eng designation

Jane Wang for obtaining her Gold Seal Certification for Estimator in Mechanical Contracting

Corporate Donations

Kenaidan recently made donations to:

- ShareLife, \$3,200
- York University, \$5,000
- Kids Up Front Foundation
- See You In Canadian Athletes Fund Inc., \$10,000
- Mackenzie Health Foundation, \$1,500
- MS Society of Canada, \$100
- Minor A Tom A Petes, \$250
- YouCaring, \$500

Charitable Matching Program

Kenaidan has recently matched employee donations to the following charities:

- Coast to Coast Against Cancer Foundation, \$1,330
- Canadian Cancer Society, \$142

Volunteer Week

From September 30th to October 6th, Kenaidan employees were invited to participate in our second annual Volunteer Week benefiting a variety of local Canadian charities. The events and charities included:

- Build event with Big Brothers/Big Sisters of Peel
- Run/Walk for Canadian Mental Health Association
- Donating blood at Canadian Blood Services
- Road hockey to benefit Canadian Breast Cancer Foundation
- Bottle drive for David Suzuki Foundation
- Food drive to support local food banks



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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