



Corbett Creek WPCP – Digester Facilities Upgrades

FEATURE PROJECT

Project Requirements

The Corbett Creek Water Pollution Control Plant (WPCP), located in Whitby, Ontario, is a secondary treatment facility that utilizes a conventional activated sludge process for sewage treatment and anaerobic sludge digestion for stabilization of wastewater sludge. Kenaidan is building a new Primary Digester, converting an existing Secondary Digester to a Primary and performing various other upgrades to the Digester Control Building.

The scope of work encompasses demolition of the existing Digester No. 1 system, sludge piping, gas, and heating systems. This is being replaced with new piping, valves, pumps, heat exchangers, and related equipment. The entire digester gas system is being replaced with new gas boosters and safety equipment. The new boilers are dual fuel, which can be powered by digester gas or natural gas. The work also includes new piping and mixing systems for the newly constructed digester.

Tie-ins and shutdowns to existing systems are also a key component of the project. The existing digesters and boilers must remain operational until the new systems are complete and commissioned. The new digester gas system will be reviewed, inspected, and signed off by TSSA before being put into service.

“The team dedicated to the project has been excellent in their ability to drive the work and stay ahead of schedule, while maintaining uninterrupted operation of the facility,” said Ryan Polito, Project Supervisor for the Region of Durham.

Kenaidan is self-performing all concrete formwork and placement, as well as all process mechanical installations. Construction began in the summer of 2016 and is scheduled to be substantially complete by fall 2017.

Project Scope

Contract Services: Stipulated Lump Sum

Concrete: 1,370 m³

Formwork: 2,748 m²

Summary of Work:

- A new 26 m diameter, reinforced concrete Primary Digester
- Modifications to an existing digester
- Digester gas room
- New sludge heat exchanger/pump room
- Expansion and modifications to existing digester control building
- Provision of new equipment, including boilers, heater exchangers, pumps, gas boosters, and valves
- Modifications to process and gas piping systems
- Provision of new digester gas safety equipment
- Upgrades and modifications to HVAC, mechanical and electrical systems
- Provision of control and instrumentation including SCADA system
- Landscaping works

Key Challenges:

- Locating the existing digester gas piping, which requires tie-in of temporary connections
- Keeping the secondary Digester No. 2 operational during construction
- Removal of sanitary manhole and re-route piping to allow excavation of the Heat Exchanger Building
- Supporting existing live process piping, gas piping, and other site services during construction
- Performing tie-ins and shutdowns without impacting ongoing operations



Roles & Responsibilities

Owner: The Regional Municipality of Durham

Consultant: R.V. Anderson Associates Limited

Formwork & Mechanical: Kenaidan Contracting Ltd.

Excavation: Gentile Contracting Ltd.

Masonry: Phillip Reeves, carrying on business as Reeves Contracting

Yard Piping: Pall-Con Construction Ltd.

Concrete Reinforcement: Myer Salit Limited

Electrical: Paynel Electrical Contractors Limited

HVAC: Teslin Contractors 2008 Limited

Pipe & Duct Insulation: Insulcana Contracting Ltd.

Waterproofing: Aquanorth Contracting Ltd.

Team Kenaidan

Project Director: David Murray

Senior Project Manager: Nick Sule

Site Supervisor: Anthony Cipolla

Assistant Project Manager: Kasra Banis

Mechanical Project Manager: Donny Di Zio

Mechanical Project Engineer: Erik Baker

Mechanical Foreman-in-Training: Anthony Clarke

Team Leader – Construction Surveyor: Claudiu Ban

Senior Construction Surveyor: Igor Melnik

Civil Engineer: George Moraru

Estimators: Max Zhao, Barry Bince

Foreman: Marcel Gagnon

Carpenter Foreman: Ron Hamersma

Project Administrator: Elisa Lui

Preconstruction Administrator: Yolanda Banks

Business Development: Marisa Nardini (Prequalification)

Inside This Issue



PROJECT UPDATE

West Richmond Hill Pumping Station



POINT OF INTEREST

Pedestrian Tunnel Installations



RECENTLY COMPLETED

West Harbour GO Station

Recognition of Safety Week Activities

SAFETY CORNER



By Sam Livingstone

North American Occupational Safety and Health (NAOSH) Week is an annual, continent-wide event where employers, employees, and stakeholders in occupational health and safety (OHS) collaborate to promote injury and illness prevention in the workplace. It was started in 1997 with an agreement between Canada, the United States, and Mexico, dedicating the first week of May each year to focus on OHS.

This past October at the annual BC-NAOSH awards ceremony, Kenaidan received an Honourable Mention plaque in the construction division. This was in recognition of the efforts made at Kenaidan's sites in BC during NAOSH week.

At the awards ceremony, Tanya Steele, the MC stated, *"Participation and involvement in NAOSH Week has been shown to improve attitudes towards safety, increase understanding of the importance of occupational safety and health, foster a safety-minded culture, increase cooperation, assist in team building, and improve communications between employees, safety committees and safety professionals."*

During the week of May 2–6, 2016, multiple events were held in BC parallel to similar events in Ontario. This was all done in support of the theme, "Making Safety a Habit." The events included:

- Hearing tests for all workers
- Special daily safety talks held on the most common causes of injuries, such as musculoskeletal injuries (MSI), ergonomics, ladder safety, and others
- Suppliers showing some of the new Personal Protective gear available
- Workers being encouraged to share their personal reason for working safely; usually this was their family or their passion
- A Fire Safety lunch & learn at our Richmond office

Coming up in 2017

April 28th is designated as the National Day of Mourning, where we remember those who were killed or injured on the job. This will be followed by NAOSH week, May 1–7. Once again, Kenaidan is planning special activities for these events. Like 2016, the official theme will be, "Make Safety a Habit." Check out the YouTube video promoting NAOSH called "Making it Work."

Stay tuned for more information on these activities. We hope to once again demonstrate Kenaidan's commitment to the safety of our workers. It is only with everyone's effort that we can accomplish as much as we do.

If you have any suggestions for activities, presentations, or other ideas, please come forward and participate in the planning process. Together we can make this another successful event.

For more information, visit the NAOSH website at: www.naosh.org.



West Richmond Hill Pumping Station

PROJECT UPDATE



Project Requirements

Located at the existing South Richmond Hill Reservoir in the City of Vaughan, the West Richmond Hill Pumping Station project involved the construction of a new pumping station building and disinfection building.

The dual-zone water supply facility has a total capacity of up to 85 ML/day and pumps water from Pressure District 6 to Pressure Districts 7 and 8 in Richmond Hill and adjacent areas. The disinfection facility uses a combined chlorine gas and ammonia sulfate system to provide top-up disinfection to the reservoir feed. The existing reservoir and potable water service remained operational during construction.

The disinfection building was constructed using open excavation techniques. The pumping station building required the construction of a secant wall cofferdam, which incorporated a thick plug at the base to provide a 12-metre-deep water-tight working area. Kenaidan engaged the technical expertise of Terraprobe and Insitu to assist and develop the design of the cofferdam and plug in conjunction with the dewatering plan. Kenaidan's Engineering team provided analysis and expertise, co-stamping the concrete plug drawings, as a portion of the plug needed to act structurally.

Deep Foundations successfully installed the secant wall cofferdam. A dewatering system was installed and operated under several regulatory discharge requirements, while maintaining the water table as low as possible under the constraints.

The basement of the pumping station consisted of stepped base slabs, 8–10-metre-high walls and a suspended slab with integral beams. A number of beams extend through the east wall to form the support for a cantilevered ring beam, which carries an external masonry wall. The building sits both on this structure and on grade.

The exterior architectural finishes were heavily influenced by the Region's consultation process with the community. There are three types of brick veneer and a pre-finished metal roof.

The work also involved:

- civil
- yard piping
- chemical handling, sanitary collection, and storm water management systems
- retaining walls
- landscaping

Mechanical work included:

- process equipment
- eight horizontal split case pumps
- 270 m of 750 mm diameter steel piping
- 150 m of 1,050 mm diameter steel piping
- surge control systems
- instrumentation and controls
- HVAC
- building plumbing

"We are impressed with the level of professionalism in Kenaidan's execution of the project," said Shivan Narine, Senior Project Manager, Capital Planning and Delivery, Environmental Services, The Regional Municipality of York. "They were a key player in the collaborative effort between the project partners, and have delivered a critical, state-of-the-art facility for York Region's residents under challenging conditions. We are very pleased with the results."

Kenaidan was awarded the contract in March 2014 and mobilized on site the following month. This project reached substantial performance on December 29, 2016. Congratulations to the project team, support staff, and subcontractors, on another successful project.

Project Scope

Contract Services: Stipulated Lump Sum

Concrete: 6,600 m³

Formwork: 7,500 m²

Design Features:

- Secant wall cofferdam around the pumping station building
- Concrete plug to seal the bottom of the cofferdam
- Installation of two tie-ins to the existing reservoir

Key Challenges:

- Dewatering discharge limit – 45 litres per second
- Clear work space for excavation and concrete works within cofferdam
- Scheduling reservoir works within the time frame and confined space
- Confined site area bound by the existing reservoir to the west and property line to the east

Roles & Responsibilities

Owner: The Regional Municipality of York

Consultant: GHD Inc.

Mechanical: Kenaidan Contracting Ltd.

Reinforcing: Albrecht Reinforcing Inc.

Waterproofing: Algoma Contractors Inc.

Site Services: Cart General Contracting Inc.

Concrete Roof Planks: Coreslab Structures (Ont) Inc.

Excavation Shoring Systems:

Deep Foundations Contractors Inc.

Terraprobe Inc.

Excavation: Gentile Contracting Ltd.

Dewatering: Insitu Contractors Inc.

Electrical: Selectra Inc.

Fire Protection Systems: SRA Fire Protection Inc.

HVAC: Teslin Contractors 2008 Limited

Masonry: Via-Con Masonry Inc.

Concrete Pumping: JCL Concrete Pumping Ltd.

Team Kenaidan

Project Director: David Murray

Project Manager: Garry Cunningham

Site Supervisors: Chris Urbanik, Anthony Cipolla

Site Supervisor, Planning: Mike Limoges

Project Administrator: Shawna Sgro

Mechanical Supervisor: Larry Dorman

Mech Project Manager (Commissioning):

Donny Di Zio

Estimator: Pritesh Patel

Construction Surveyors: Claudiu Ban, Igor Melnik

Preconstruction: Anna Gutierrez

Engineering: Steve Fogarasi, Elia Rizkalla

Health, Safety & Environmental: Harpreet Singh, Derek Beharry



West Harbour GO Station
RECENTLY COMPLETED



Pedestrian Tunnel Installations

POINT OF INTEREST

Kenaidan has completed a number of projects at various transit stations that involved the installation of pedestrian tunnels. Recently, pre-cast tunnel installations took place at the Guildwood and Aurora GO stations, where our teams meticulously planned a 53-hour and 55-hour shutdown period to complete the tunnel installations beneath the rail corridors.

Typically, pre-cast tunnel segments, weighing approximately 34 tons each, are off-loaded from trucks and lowered onto a steel frame known as a 'grillage' sitting at the bottom of a pit. From there, segments are adjusted into their final position, secured, and backfilled. Once the tunnels are completed, the tracks and platforms are then fully reinstated in time for train traffic to resume.

At the Guildwood GO Station, an innovative installation method was used due to the scale of the work involved. Instead of the 'typical' method, the pre-cast segments were pre-assembled on a temporary steel grillage and bolted together to form a complete tunnel prior to the shutdown timeframe.

Once the shutdown period began, the team worked meticulously around the clock to complete all associated work for the installations. The fully assembled tunnels were hydraulically jacked into place, grouted, and backfilled. The timelines were extremely tight, and work continued right down to the wire before re-opening the tracks for train service.

Next, it was time for the Aurora site team to execute their installation shutdown weekend. The approach for this project followed the 'typical' installation method. Despite facing challenging site conditions, cold temperatures, and snowy weather, the Aurora team met their strict timeframe and train service began as scheduled.

Detailed preparation was put into the specific work plans for each installation to ensure that everything ran smoothly and according to plan. The preparation work prior to the installation included: receiving and setting pre-cast segments, post-tensioning, waterproofing, and insulation. Each installation method presented various challenges to the teams including: difficult site conditions, limited work areas and confined spaces, and environmental conditions.

However, the biggest challenge each project team faced was severely limited time. They worked on a weekend shutdown schedule with train service halted. All activities for the duration of the installation process were planned by the hour.

It is critical that these project installations are completed on time to minimize service disruptions and avoid delays.

The site teams and subcontractors are under tremendous pressure to ensure each installation is successfully executed within the tight timeframe allotted. These logistically demanding projects are only possible with skillful teamwork, perseverance through challenging situations, and incredible cooperation from our site teams, support staff, and subcontractors.



Guildwood GO Station



Aurora GO Station



Our Company, Our People

ROAMING PHOTOGRAPHER



At the Guildwood GO Station, Andy Thomson, Bryon Estrada, Jamie Laroque, and Paolo Di Carlo, are pouring concrete for a slab on grade in the generator room.



The Trafalgar and Derry Road Feedermain Reservoir team showing their holiday spirit, competing in our annual Ugly Christmas Sweater Contest. (L to R): Harpreet Khachh, Garreth Barkey, David Pimpinella, Kathleen Boyd, Rida Abdullah, Bob Saunders, Kunjan Mehta.



Congratulations to the 2016 Leadership College Graduates! (L to R): Hiro Kawasaki, Nick Cacciaccaro, Andy McLellan, Kathleen Boyd, Chris Kodama, Chris Stewart, and Pat Parente. They completed their three-year program of study at the end of 2016, and were recognized on January 13th, 2017 at a ceremony at our Head Office. This is the eighth graduating class since the college started in 2005.



A concrete pour in action at the Trafalgar and Derry Road Feedermain and Reservoir project.

Contributing Editors:

Alex Maini
Donny Di Zio
Kasra Banis
Anthony Cipolla
Garry Cunningham
Scott Brazeau
Orlando Gutierrez
Marisa Nardini
Andrea Howson

Kenaidan Welcomes

Michael Zhang, Estimator
Kathy Sterman, Senior Proposal Writer
Arthur Musisi, Health & Safety Advisor

Upcoming Events

Kenaidan's Annual Triathlon,
March 23rd & 24th, 2017

Forman in Training Program (FIT) Update

Don Pletch was promoted to CLH1
Byron Estrada was promoted to LCL
Dave Lucyk was promoted to Plumbing Foreman

Congratulations To

Hanna Yacoub for obtaining his P.Eng. Designation
Brett Latham for obtaining his Gold Seal Designation for Project Manager in General Contracting
Denise Angelakos for obtaining her Gold Seal Designation for Project Manager in General Contracting
Simon Kirkland for obtaining his Advanced Diploma in Civil Engineering Technology
Steven Radencich on his promotion to Project Manager
Tyler Hamalainen on his promotion to Estimator

Corporate Donations

Kenaidan recently made donations to:

- North Toronto Hockey League
- Engineering Innovations Forum
- Canadian Hard of Hearing Association
- Kids Up Front Foundation
- Safe Haven

Charitable Matching Program

Kenaidan has recently matched employee donations to the following charities:

- Nova's Ark
- Gilda's Club Toronto
- York Region Food Network



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.



Kenaidan Contracting Ltd.

7080 Derrycree Drive,
Mississauga, Ontario, Canada L5W 0G5
Telephone 905.670.2660
Facsimile 905.670.9172

Kenaidan Contracting Ltd.

4311 Viking Way, Unit 240,
Richmond, British Columbia, Canada V6V 2K9
Telephone 604.270.7670
Facsimile 604.270.7612



Kenaidan is committed to reducing its ecological footprint. This newsletter has been printed on FSC certified paper by an FSC certified supplier.



Kenaidan is a registered trademark of Kenaidan Contracting Ltd.

k e n a i d a n . c o m