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Coldstream Concrete Creating Jobs in London Area

In 2012 Coldstream Concrete Limited from Ilderton Ontario, just a few minutes northwest of London, invested in new machinery and equipment and expanded its operations to include the manufacture of reinforced concrete sewer pipe. This new investment is creating much needed well paying manufacturing jobs in the London area.

In the last few years the City of London and surrounding area has been suffering from one of the highest rates of unemployment in the country and it has been one of the hardest hit regions in terms of manufacturing job losses. In 2012 Caterpillar closed its London Electro Motive Diesel and moved 450 manufacturing jobs to Muncie, Indiana. This was the second blow to the local economy in six months. In September 2011, Ford Motor Company closed its St. Thomas Assembly plant in Talbotville, just minutes south of London, putting 1,000 manufacturing workers out of work. The Ford plant closure also caused the demise of a few auto parts feeder plants in the region. Only two years prior, the region saw the closing of the Sterling Truck plant affecting over 1,300 workers.

Coldstream Concrete Limited is celebrating its sixty-eighth year in business, producing quality precast concrete products for the sewer and watermain industry. Employing nearly 75 people with high paying manufacturing wages, Coldstream has an impact on local economies of the City of London, the County of Middlesex and Southwestern Ontario. After the major expansion of plant and equipment in its sewer pipe line, Coldstream and its employees are relying heavily on support from Southwestern Ontario contractors and municipalities in installing quality and time proven precast concrete products in their sewer and watermain infrastructure budgets.

Bob Brown and Amy Koteles – investing to create local jobs

Coldstream Concrete is a family run business. Chester Brown began to produce concrete drain tile for local farmers under the name of Coldstream Concrete in 1945. The company started on the family farm as a completely manual operation. The operation became more and more mechanized and when the market peaked in the 1980s, Coldstream was operating three drain tile making machines all year long and was the largest supplier of concrete drain tile in Ontario. It was also during this time when Chester's son, Bob Brown, took over the business.

Bob decided to enter the sewer and watermain market in the early 1990s. The company started out with small and medium-sized manholes and catchbasins after building a modern plant.

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Call 519.489.4488 or email resources@ocpa.com to book your Lunch & Learn today.

PipePac Available at OCPA.com

PipePac software has a user friendly design program that enables designers to determine the class of concrete pipe for any installation conditions that may be anticipated.

To download PipePac Software for free, visit the Technical Resource Centre at www.ocpa.com.

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Concrete Industry “Little Guy” one of Largest Employers in Middlesex Centre

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In the early 2000s the company entered the heavy precast marketplace undergoing another expansion, adding large manholes, headwalls, valve chambers and box culverts to their product line. “We always seemed to expand in manageable pieces,” said Bob Brown who has managed the business for the past 35 years. In 2002, the third generation joined the company as Amy Koteles, Bob’s daughter came on board.

The latest expansion included the addition of two major pieces of testing equipment, a Hawkeye hydrostatic tester and a Hawkeye D-Load tester. “With this state-of-the-art testing equipment our quality control people will ensure that our sewer pipe and other products are of the utmost quality,” said Amy Koteles

Impact on the Community

Even though Coldstream may be the “little guy” in the industry it is one of the largest employers in the Municipality of Middlesex Centre, which borders the City of London on the west, north and east sides. The majority of its 75 employees reside in the City of London with the remainder sprinkled around the surrounding communities including Strathroy, Ilderton, Komoka and Parkhill.

“We know that we have an impact on the London area economy which has been suffering in the last few years,” stated Bob Brown. Not only has Coldstream Concrete provided employment, there is also a significant spin-off effect. The primary raw materials going into Coldstream’s precast structures include reinforced steel supplied by London and Southwestern Ontario steel suppliers, cement from St. Marys, stone and sand from the local area. All of these raw material purchases contribute to the local and Ontario economies.

Coldstream Concrete needs to be supported so that it can contribute to the regional economy. “We rely on the municipalities in Southwestern Ontario, especially the City of London, to specify and purchase our products to make us a successful operation. Employing 75 people with well paying manufacturing jobs makes a significant contribution to the economies of the City of London, Middlesex County and Southwestern Ontario,” reiterates Bob Brown.

Locally made concrete pipe made from local raw materials

Addendum Addresses Standard of Care for Plastic Pipe

A sanitary sewer project was released for tender by the City of London in early 2013. The sanitary sewer was designed using reinforced concrete pipe. However, the contract also included a trial section of 65 metres of 900mm polypropylene plastic pipe. The plastic pipe in question was offered free of charge by the Ohio based producer of this pipe.

There are major differences between reinforced concrete pipe and plastic pipe. Drainage systems and sewer systems constructed from concrete pipe and plastic pipe have to be designed differently and installed differently. The consulting engineer for the City of London project recognized those differences and issued a comprehensive addendum to address the design and installation of a relatively large plastic pipe.

The key points of the Addendum included:

- **Certification Letter from contractor – includes shop drawings, calculations, and installation procedures**
- **Design calculations stamped by a professional engineer registered in the Province of Ontario**
- **Trench box detail stamped by a professional engineer registered in the Province of Ontario addressing the potential conflict between ASTM D2321 and Occupational Health and Safety Act**
- **Shop drawings for connection to manholes**
- **Deflection testing at completion of construction and again at one year before the expiration of the warranty period**
- **Manufacturer’s representative on-site during construction**

Design engineers and municipal engineers involved with drainage systems and sewer systems across Ontario should take note of the wording of the Addendum as follows:

“For the Pipe Trial Section pipe materials, the Contractor shall submit shop drawings.

The shop drawing submission shall include a Certification Letter from the pipe manufacturer that the pipe material and installation procedures will meet or exceed City of London Standard Specifications, these Special Provisions and the installation conditions shown on the drawings and as otherwise identified in the Contract Documents. The Contractor (or pipe supplier) shall provide the structural design calculations for this pipe installation, stamped by a professional Engineer licensed in Province of Ontario.

The Contractor shall submit drawings for the trench box use stamped by a Professional Engineer licensed in the Province of Ontario which meets the requirements of both ASTM D2321 -Standard Practise for Underground Installation of Thermoplastic for Sewers and Other Gravity- Flow Applications and Occupational Health and Safety Act and Regulations for Construction Projects.

The Certification Letter shall be supported by detailed pipe class selection calculations and shall be sealed by an Ontario Professional Engineer, specifically for this project.

The Contractor shall provide a shop drawing identifying the two manhole connections. A cored hole shall be drilled to accommodate the manufacturers’ connection boot.

Sanitary sewers are to be installed as per manufacturer’s specification. The Contractor shall have on-site at the commencement of construction, a manufacturer representative to advise on the recommended construction procedure for the installation of sanitary sewer. The Contractor shall maintain liaison with the manufacturer throughout the installation of the sanitary sewer trial section for advice and guidance as required. In addition, the Contractor shall ensure that a representative of the manufacturer makes daily site visits during construction and after completion, if required. The representative of the manufacturer should alert the Contractor in writing of any variance to their recommended material and construction procedures. Copies of all correspondence shall be given to the Contract Administrator.

Where the trial pipe section is used, the Contractor shall perform a mandrel test, upon completion of construction, to ensure that pipe deflection does not exceed a 5% deflection. Prior to the end of the one year warranty period, the Contractor shall perform another mandrel test, to the satisfaction of the Contract Administrator.” For more information contact paul.imm@ocpa.com.

OCPA Executive Director Interviewed for Engineering Dimensions Article

Highway 174 Collapse, Ottawa – Sept. 2012
Courtesy: Ottawa Fire Services

Gerry Mulhern, P.Eng., Executive Director of the Ontario Concrete Pipe Association was interviewed by Engineering Dimensions for an article entitled *Shedding new light on the nature and inevitability of RISK*. Engineering Dimensions is published bimonthly by Professional Engineers Ontario (PEO) and is distributed to all PEO-licensed professional engineers.
An extract from the article is included here.
The full article is available at:
http://www.peo.on.ca/DIMENSIONS/JanFeb2013/Feature1.pdf

Veteran engineers, however, also appear to be focusing on risk management as a way to assure the public that the engineering profession stands ready to safeguard crucial infrastructure. Gerry Mulhern, P.Eng., executive director of the Ontario Concrete Pipe Association (OCPA) is committed to the profession's due diligence mandate. As a representative of the concrete pipe industry, Mulhern is leading a campaign to persuade Ontario's transportation ministry to complete a more thorough inventory of the health and safety of the province's bridges, culverts and other buried infrastructure.

He is especially concerned about reports of sinkholes and culvert-related road and bridge failures in Ontario. In 2006, an 18-year-old Sudbury area woman was killed after driving her car into a sinkhole. Although the incident generated some brief debate on the safety of Ontario roadways, it quickly disappeared from the public consciousness.

It has resurfaced, however, with the September 2012 road collapse on Highway 174 near Ottawa, in which a motorist's vehicle completely disappeared below the road surface. The apparent cause of the sinkhole was corrosion of a three-meter steel pipe under the roadway, which led to erosion of the nearby subsoil and eventual cave-in. Luckily, the motorist survived the ordeal.

Mulhern says the Ottawa sinkhole should serve as a wakeup call for municipalities across the province, especially in view of news that the damaged steel pipe had been inspected in 2011, and was identified as in need of renewal.

Mulhern and other officials with the OCPA have twice met with Ontario transportation and infrastructure minister Bob Chiarelli, to discuss the ministry's new culvert inventory system. The ministry is now collecting data that will be used to monitor pipe performance and other features. The results obtained will assist in refining culvert practices and standards in design, construction and maintenance.

According to a 2009 report of bridge inspection and maintenance of the Ontario Auditor General, there is a lack of legislation requiring municipalities to comply with the bridge inspection regime demanded of bridges under provincial authority. As each municipality is responsible for bridges in its own jurisdiction, there is no provincial body with authority to overview municipal compliance with bridge safety. As well, there is no central database on the number of municipal bridges and their overall condition.

"My position on risk is that a professional engineer can do four things with risk," Mulhern said. "They can avoid it, they can transfer it, they can mitigate it or they can accept it. I don't think enough engineers spend enough time thinking about it and, too often they are accepting it because they are working for a municipality or a consultant who is actually calling the shots." Mulhern says the sinkhole incidents raise the issue of risk management being subordinated to budgetary considerations in some municipalities.

DELAYING DECISIONS FOR BUDGET REASONS?

"The key point has to be that public safety is paramount and that an engineer's bridge inspection report, including remedial actions and timing of remedial actions, should not be influenced by the availability or non availability of funds," he said.

Mulhern recommends a detailed program to reduce risk and ensure the safety of Ontario's buried infrastructure. The plan includes asset management, dedicated funding toward infrastructure renewal, creation of a provincial database for bridges and culverts (including a history of specific bridge inspections) and improvements to public transportation and highway legislation. Such legislative amendments would give the province authority to enforce bridge inspection requirements at the municipal level.

Lastly, Mulhern believes safety would be enhanced by encouraging the independence of engineers and bridge inspectors. "Bridge engineers and bridge inspectors should be allowed to work independently and objectively," Mulhern said. "The recommendations should not be primarily based on financial considerations. Public safety should be paramount."

Polypropylene Pipe Floatation at Columbus Airport

In July 2012, a 1,500mm diameter polypropylene plastic storm pipe was discovered to have succumbed to groundwater hydrostatic forces at the Port Columbus International Airport in Columbus, Ohio. The polypropylene storm pipe literally floated out of the ground. Based on photographic evidence, it appears that the polypropylene pipe displaced approximately 1,200mm vertically from its initial line and grade. At the time of initial installation, the owner decided to not use Reinforced Concrete Pipe (RCP) in lieu of the flexible pipe. After the pipe installation failed, the owner ultimately decided to use RCP from Hanson Pipe & Precast to replace the polypropylene storm pipe.

Floatation of 1,500mm diameter Polypropylene Pipe at Port Columbus International Airport

Unique Precast Post Tensioned Overflow Structure Designed for West Don Lands Stormwater Conveyance System

By Dan Haggerty, C.E.T *Munro Ltd.*
Tyler Lahti, P.Eng *R.V. Anderson Associates Limited*

Waterfront Toronto's Revitalization Project is the largest urban renewal project in Canada. The revitalization project includes 800 hectares of former industrial lands and creation of 40,000 residential units over a period of 25 years. The project required a new stormwater treatment facility and outfall for the West Don Lands precinct, a 32 hectare area which will be the site of the 2015 Pan Am Athletes Village. The precinct will include 6,000 residential units as well as commercial and other buildings. The Stormwater Conveyance System project is the first phase of the overall Stormwater Quality Facility for the West Don Lands and includes the entire underground infrastructure to manage stormwater flow and to allow for a storm-water treatment facility that will be built in the second phase of the project.

Pipe Tower Precast by Munro Ltd.

The West Don Lands Storm-water Quality Facility reflects the criteria the City of Toronto incorporated in their 2006 Wet Weather Flow Management Guidelines. The City of Toronto's approach to stormwater management is hierarchical meaning that control systems must first be implemented at the source, then conveyance controls and then lastly end-of-pipe controls. The focus is on managing and treating stormwater quantity and quality at the source, similar to the "treatment train approach". A treatment train is normally required to meet the multiple objectives of water balance, water quality, erosion and flood control in an overall stormwater management strategy. In the case of water quality, this development was subject to stringent stormwater sediment removal and disinfection provisions of the guidelines. The guidelines require 80% total suspended solids (TSS) removal and disinfection to 100 E.coli per 100 mL.

The real engineering challenge comes in managing this large quantity of stormwater and treating it to meet the stormwater quality requirements in a cost effective way. Large processing volumes generally require large, expensive equipment. In order to reduce the size of the processing equipment the consulting design engineers, R.V. Anderson Associates Limited, used the main shaft of the new outfall conveyance system as a storage space for stormwater. The 12 metre diameter shaft was also used to launch the tunnel boring machine (TBM) which tunnelled the three metre diameter concrete-lined rock tunnels under major roads and utilities.

The 12 metre diameter shaft provides 3,000 cubic metres of water storage to allow attenuation of the flows to the treatment system. The storage system is used every time there is any appreciable rainfall. Due to the attenuated flows, the processing equipment is smaller resulting in operational cost savings. An overflow from the storage shaft was created by constructing a vertical standing pipe structure in the centre of the storage shaft with a funnel-like weir at the top of the shaft. It was this overflow pipe tower which required product engineering design.

Generally, standing pipe-like structures are cast-in-place on the jobsite, but usually they are cast-in-place against the surrounding earth. This standing pipe structure used as an overflow pipe had to be freestanding in the centre of the 12 metre diameter shaft. The three metre diameter standing pipe was originally designed to have a wall thickness of 400 mm for cast-in-place concrete. To construct this cast-in-place would have been costly, time consuming and extremely challenging. It would have meant constructing reinforcing cages 25 metres down at the bottom of the shaft or constructing reinforcing cages at ground level and then lowering them into the shaft and tying them in place. This would have been a significant challenge to correctly construct the reinforcement and hold it in place while pouring the concrete. In addition it would have been difficult to pour the wall and keep the wall of the structure straight. Furthermore, the time to complete the structure by casting in place could have taken several months.

To accelerate the construction schedule, precast concrete was considered to construct the standing pipe using standard precast components for which precast producers already have forms. However, standard precast concrete structures (like 3000 mm maintenance holes) used in storm and sanitary sewers are not designed to be freestanding structures.

The contractor (C&M McNally Engineering Corporation) and the design engineer (R.V. Anderson Associates Limited) contacted Munro Ltd. in order to discuss alternatives. The original design called for a wall thickness of 400 mm for the overflow pipe. The outside diameter of the overflow pipe structure could not be increased due the storage volume requirements on the dry side of the shaft. Together they came up with a design for a free standing pipe structure that would work.

The design called for a segmental precast concrete structure that would be post-tensioned with high strength threaded bars. The wall thickness was reduced to 279mm to fit the steel forms Munro Ltd had, while still maintaining the original outside diameter. The concrete compressive strength was increased to allow for both the reduction in the wall thickness, as well as the increased stresses from the post-tensioning. Post-tensioning ducts would be cast into each section. Munro Ltd. had the experience, forms and facilities to fabricate these highly customized components.

As the engineer responsible for the proper functioning of the system, R.V. Anderson Associates Limited was concerned about the joints between the sections. The freestanding pipe structure is hydraulically connected to Lake Ontario and will contain water inside it at all times. Joints between sections must remain watertight throughout the service life of the structure. To create the permanent seal at each joint, the groove in the pipe sections was grouted with cement. Another item of concern was guaranteed alignment of the post-tensioning ducts. In order to ensure post-tensioning bar can be fed from the bottom section through all the sections to the top, each section must have accurate, consistent placement of the ducts and each section must be placed on top of the section below it so the ducts align and form a clear, straight path for post-tensioning.

Schematic – Main Shaft Construction

To maintain sufficient cover in the thinner wall pipe sections, the original 25M reinforcing steel specified for the cast-in-place pipe was reduced to 20M to reinforce the precast concrete sections. Each section was reinforced with four layers of rebar; vertical and horizontal bars on the inner and outer faces of the wall. This reinforcement was necessary to resist the large bursting pressure exerted on the pipe from the high internal water pressure, as well as the high vertical loads from the post-tensioning. In addition, the free standing pipe structure had to act as a structural column supporting the heavy weir structure and the roof of the shaft.

To ensure accuracy and consistency of rebar placement in all the sections, a frame was designed by Munro Ltd. for the rebar placement and a jig was designed to ensure rebar sections were tied accurately and consistently. Accuracy of rebar placement was extremely important in manufacturing to ensure sufficient concrete cover in the thin-walled structure. It was also important that each section be equally round so that the completed structure would function like one continuous pipe. A mould plate and jig were also designed to create the holes in the structure for the post-tensioning ducts. Sixteen plastic ducts were cast into the walls to allow the post-tensioning bars to be installed in the field. R.V. Anderson Associates Limited had an inspector visit the Munro Ltd. manufacturing facility to review the set-up for the rebar and mould prior to manufacturing.

Munro Ltd. manufactured eight three metre diameter sections, two metres in height each, and one segment of partial height that was cast into the bottom of the weir structure. The sections were placed one on top of the other using alignment markings to ensure matching of the post-tensioning ducts. The segments were post-tensioned together and the annulus of the pipe joints were grouted solid creating a permanent seal. The West Don Lands Stormwater Conveyance system also required large precast box culverts (3 m x 5 m) which Munro Ltd. designed and manufactured. The box culverts were incorporated into the outfall and were sized to reduce the velocity of water discharge into the Keating Channel which is a navigable waterway.

The West Don Lands Stormwater Conveyance System resulted in significant engineering and construction innovations to meet performance requirements and an accelerated construction schedule. The project received the Ontario Concrete Award 2012 for Infrastructure.

OCPA Partners with Town of Milton on Pan AM Games Velodrome

Paul Imm, P.Eng.
OCPA, Technical Resources Engineer

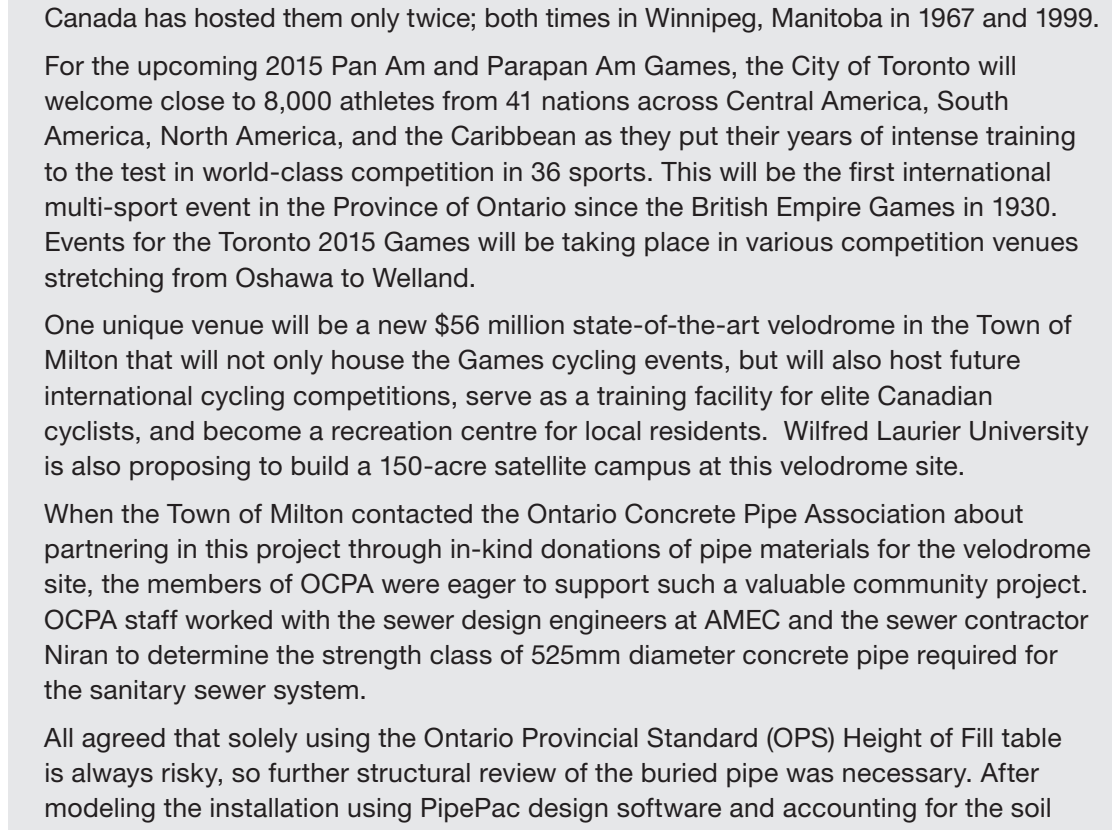
The Pan American Games are the world's third largest international multi-sport Games held every four years in the year preceding the Olympic Summer Games. While the Pan Am Games have been hosted in a dozen countries throughout the Americas, Canada has hosted them only twice; both times in Winnipeg, Manitoba in 1967 and 1999.

For the upcoming 2015 Pan Am and Parapan Am Games, the City of Toronto will welcome close to 8,000 athletes from 41 nations across Central America, South America, North America, and the Caribbean as they put their years of intense training to the test in world-class competition in 36 sports. This will be the first international multi-sport event in the Province of Ontario since the British Empire Games in 1930. Events for the Toronto 2015 Games will be taking place in various competition venues stretching from Oshawa to Welland.

One unique venue will be a new $56 million state-of-the-art velodrome in the Town of Milton that will not only house the Games cycling events, but will also host future international cycling competitions, serve as a training facility for elite Canadian cyclists, and become a recreation centre for local residents. Wilfred Laurier University is also proposing to build a 150-acre satellite campus at this velodrome site.

When the Town of Milton contacted the Ontario Concrete Pipe Association about partnering in this project through in-kind donations of pipe materials for the velodrome site, the members of OCPA were eager to support such a valuable community project. OCPA staff worked with the sewer design engineers at AMEC and the sewer contractor Niran to determine the strength class of 525mm diameter concrete pipe required for the sanitary sewer system.

All agreed that solely using the Ontario Provincial Standard (OPS) Height of Fill table is always risky, so further structural review of the buried pipe was necessary. After modeling the installation using PipePac design software and accounting for the soil properties, installation type, trench width, and the fact that this sewer would be more than 9 metres deep, OCPA determined that a 210-D strength class would be required, which is higher than the standard 140-D class typically kept in stock. Due to these installation conditions it was also decided to use a higher strength DR18 PVC pipe for the smaller diameter section of this sanitary sewer.



210-D class concrete pipe

The 525mm diameter portion of the sanitary sewer was designed as three MH-to-MH pipe runs with a total length of 340m. To avoid any potential pipe joint compatibility issues between the manufacturers, it was decided that three concrete pipe producers would supply each of the three pipe runs of high-strength 525mm diameter concrete pipe. Hanson Pipe & Precast, M-Con Pipe & Products, and Con Cast Pipe all agreed to expedite the production of this 210-D class pipe in order to test the pipe to verify both its structural strength and the hydrostatic performance of its watertight joints prior to the two-week delivery lead time that the contractor required.

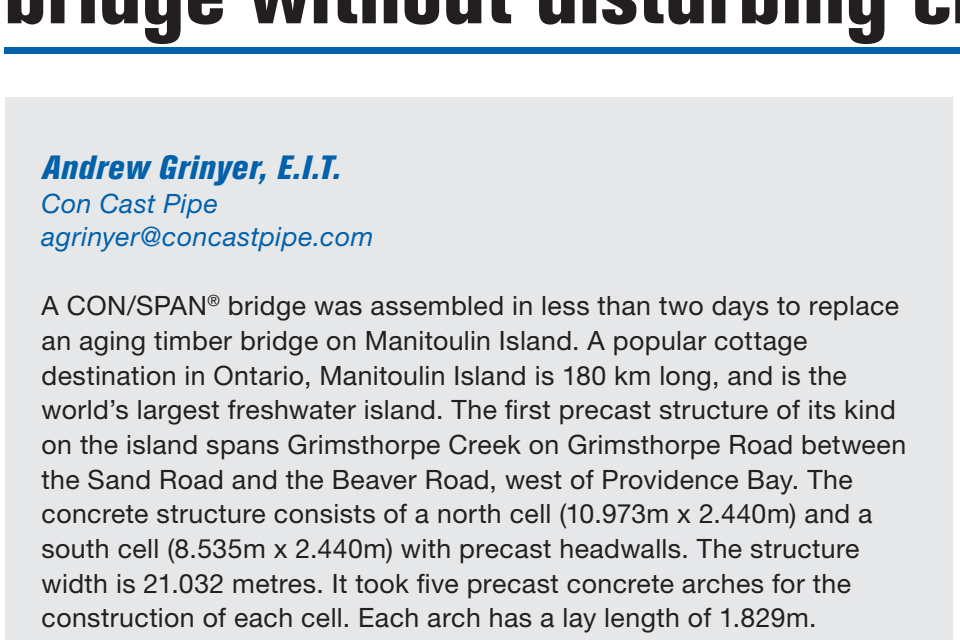
While the legacy of the Toronto 2015 Pan Am Games is still to be determined, it takes due diligence from a team of professionals and high quality products to build infrastructure that will last for decades to come

Manitoulin Island's first-ever CON/SPAN replaces bridge without disturbing creek

Andrew Grinyer, E.I.T.
Con Cast Pipe
agrinyer@concastpipe.com

A CON/SPAN® bridge was assembled in less than two days to replace an aging timber bridge on Manitoulin Island. A popular cottage destination in Ontario, Manitoulin Island is 180 km long, and is the world's largest freshwater island. The first precast structure of its kind on the island spans Grimsthorpe Creek on Grimsthorpe Road between the Sand Road and the Beaver Road, west of Providence Bay. The concrete structure consists of a north cell (10.973m x 2.440m) and a south cell (8.535m x 2.440m) with precast headwalls. The structure width is 21.032 metres. It took five precast concrete arches for the construction of each cell. Each arch has a lay length of 1.829m.

Grimsthorpe Creek drains wetlands in the Spring Bay area that are significant elements of an ecosystem that supports a variety of aquatic animals and birds, including the migratory sandhill crane. Design of the double-cell structure accommodates spring runoff, seasonal rainfall, and major storms. Work adjacent to the creek had to take place in a period between early July and late October in consideration of dryer periods and minimal impact on the wetlands. The north cell of the structure was installed without interrupting the natural flow of the creek. The south cell is a larger structure designed to accommodate flow while the creek is flowing at high water.



Footings prepared for CON/SPAN system designed to CAN/CSA-S6-06, CL-ONT-625 to accommodate stream flow, runoff and local traffic.

Construction of the bridge began with removal of the timber structure and preparation of the foundation and footings to support the CON/SPAN system. Once the concrete footings had been laid out, poured, and set, the site was ready for the arrival of the arches that were shipped from Con Cast Pipe in Guelph, one unit per flatbed truck. When the trucks arrived on site, the arch was offloaded with a boom crane and placed in position like a giant Lego® assembly. The just-in-time delivery kept the construction crews busy setting the units to build each cell, and to lock them in place.

The structure is designed to CAN/CSA-S6-06, the Canadian Highway Bridge Design Code (CHBDC) for CL-ONT-625 Loading plus 0.7 m earth cover. The CHBDC is the Canadian design standard for bridge structures over three metres in span. CL-ONT-625 is the live load standard in Ontario for a vehicle wheel loading of CL-625. Live loads change in position or magnitude, whereas dead loads remain constant throughout the design life of the drainage system. The most commonly considered live loads in CON/SPAN applications are vehicular loads, usually from trucks. The soil load is often the sole dead load consideration. The Grimsthorpe structure is designed with a shallow overburden.

Before the precast units could be set in place, the contractor, Belanger Construction had to prepare the site for poured-in-place concrete footings. The work included steel pile caps with frost tapers and channel extension. The "H" piles (15-HP310x79) had an approximate length of

10.973m x 2.440m x 1.829m CON/SPAN unit being lowered into position

4.5 metres. Poured-in-place footings were 1.0 m thick, 1.5 metres wide and 9.445 metres long. Included in the contract was the construction of gabion basket wing walls, 0.3 m rip rap to armour the footings, and 100mm and larger cobble for the southerly dry channel and stream bank.

CON/SPAN® is a patented modular precast system for total set-in-place construction of bridges, culverts, underground structures and environmentally acceptable alternatives for underground containment (http://www.con-span.com). Con Cast Pipe (www.concastpipe.com) was established in 1989 as a precast innovator offering the most comprehensive range of infrastructure products available in the precast concrete industry. The CON/SPAN system over Grimsthorpe Creek is a first for the island. Its use suggests that precast concrete arches, boxes and pipe are options for upgrading the island's small bridges and culverts.

Completed structure with gabion basket wing walls, 0.3 m rip rap to armour the footings, and 100mm and larger cobble for the southerly dry channel and stream bank.

Photos courtesy of Grant Lee, AGL Marketing Limited

Project Team

Municipality of Central Manitoulin

Tulloch Engineering:	Consulting Engineer/Surveyor
G.D. Jewel Engineering Inc:	CON/SPAN design
MRW Consulting Engineers:	Geotechnical Engineer
Bélanger Construction:	General Contractor
More Than Concrete:	Footings Formwork
Amherst Crane Rentals Ltd:	Crane

OCPA Engineers at 2013 ACPA Pipe School

Paul Imm, P.Eng. and Enrico Stradiotto, P.Eng. of the Ontario Concrete Pipe Association were among the experienced and knowledgeable industry speakers in North America at the American Concrete Pipe Association's 2013 "Campaign for Excellence" Pipe School. Pipe School was held in Indianapolis, Indiana from January 9 to 12 and was followed by the Precast Show. This year's Pipe School attracted more than 350 delegates from all over the United States, Canada and Mexico looking for the opportunity to join a panel discussion with state Department of Transportation engineers, tour local pipe plants, and learn about sales and marketing, production, quality, safety, and engineering design.

Paul gave a presentation on how both the properties of the pipe and the surrounding embedment soil interact with each other by using design examples showing performance limits based on different compaction levels and soil properties.

Enrico presented the topic of, "Discussing Pipe Failures with Specifiers", as part of the Marketing Track at ACPA's Pipe School. This can be a difficult topic if the discussion includes your own product. The presentation provided an example approach on how to prepare for such a discussion, including: establishing credibility, how to conduct oneself, and addressing the issue with facts. Pipe failures in infrastructure will continue to occur, costing the public money and risking its safety. Learning from past experience and pipe performance is one way to improve future decisions.

Paul Imm, P.Eng.

Enrico Stradiotto, P.Eng.

Members of the Ontario Concrete Pipe Association who sponsored the School were: HawkeyePedershaab, Press-Seal Gasket Corporation, CAM - Concrete Accessory Manufacturing, Eastern States Steel Corporation (Canadian Concrete Accessories Ltd.), Schlusselbauer Technology, Hamilton Kent, Mel C. Marshall Industrial Consultants Inc., and Lafarge North America. These firms were recognized throughout Pipe School for their continued support to make the School a success.

OCPA a Platinum Sponsor of APWA Congress 2014

In 2014, the Ontario Public Works Association will host the American Public Works Association (APWA) International Congress and Exposition in Toronto. More than 6,000 public works industry professionals from all over the world will come together for four days of extensive educational programming, workshops, viewing an enormous expo floor and networking. They will learn about the latest innovations, exchange ideas, and develop new business relationships. There are several activities that the Ontario Chapter has to provide to make this all happen. Some of them are the "Get Acquainted Party", the hospitality booth, the vendor social, the sports events, the technical tourism, not to mention the 250-plus volunteers to make things run smoothly.

Ontario Concrete Pipe Association is proud to be a Platinum Sponsor of this event.

businesspipeline

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Website: www.concastpipe.com
Contact: Brian Wood or Jason Spencer

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Contact: Mike Leathers

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Website: www.inlandcanada.com
Contact: Robert Powers

Lafarge
Locations: Calgary, Edmonton, Winnipeg, Thunder Bay
Tel: 403-292-9502
Fax: 403-255-2677
Email: tina.larson@lafarge-na.ca
Website: www.lafargecorp.com
Contact: Tina Larson

Langley Concrete Group
Locations: Langley, Victoria & Abbotsford, BC
Tel: 604-533-1656
Fax: 604-533-8191
Email: pipeman@langleyconcretegroup.com
Website: www.langleyconretegroup.com
Contact: Mark Omelaniec

M-Con Products Inc.
Location: Carp, ON
Tel: 1-800-267-5515
Fax: 613-831-2048
Email: sales@mconproducts.com
Website: www.mconproducts.com
Contact: Carlo Taverna

M-Con Pipe & Products Inc.
Location: Ayr, ON
Tel: 519-632-9112
Fax: 519-632-7440
Email: dgalloway@mconproducts.com
Website: www.mconproducts.com
Contact: Doug Galloway

Munro Ltd.
Location: Barrie, ON
Tel: 1-800-461-5632
Fax: 705-734-2920
Email: jmunro@munroltd.com
Website: www.munroltd.com
Contact: John Munro

Rainbow Concrete Industries Ltd.
Locations: Sudbury, ON
Tel: 1-800-461-6281
Fax: 705-566-4813
Email: sales@rcil.ca
Website: www.rcil.com
Contact: Michael Gold

Gaskets and Connectors

Hamilton Kent
Location: Etobicoke, ON
Tel: 1-800-268-8479
Fax: 416-674-6960
Email: bergre@hamiltonkent.com
Website: www.hamiltonkent.com
Contact: Bernard Gregoire

Press-Seal Gasket Corporation
Location: Fort Wayne, IN
Toll-free: 800-348-7325
Cell: 617-803-1750
Email: mtomkinson@press-seal.com
Website: www.press-seal.com
Contact: Matt Tomkinson

Reinforcing Steel

Laurel-LEC Steel Inc.
Location: Brantford, ON
Tel: 519-759-2300
Fax: 519-759-1570
Email: grant@lecsteel.com
Website: www.lecsteel.com
Contact: Grant Fraser

Numesh Inc.
Location: Laval, PQ
Tel: 1-800-363-0847
Fax: 450-663-9049
Email: m.mongeau@numesh.com
Website: www.numesh.com
Contact: Michel Mongeau

StelCrete Industries Limited
Location: Niagara Falls, ON
Tel: 1-866-924-0837
Fax: 905-735-3955
Email: rnichols@stelcrete.com
Website: www.stelcrete.com
Contact: Robert Nichols

Safety Climbing Equipment

MSU Mississauga Ltd.
Location: Mississauga, ON
Tel: 1-888-220-2213
Fax: 905-823-4947
Email: sales@msumississauga.com
Website: www.msumississauga.com
Contact: Virginia Junkin

Stepcon Industries Inc.
Location: Mississauga, ON
Tel: 1-888-783-7266
Fax: 905-897-6001
Email: stepcon@on.aibn.com
Website: www.stepconindustriesinc.com
Contact: Michael Greer

Precast Manufacturing Equipment and Accessories

Mel C. Marshall Industrial Consultants Inc.
Location: Delta, BC
Tel: 604-943-8512
Fax: 604-943-2738
Email: melmarshall@telus.net
Website: www.precastconcretebc.com
Contact: Mel Marshall or Braden Marshall

J D Industrial Sales
Location: Cambridge, ON
Tel: 519-267-4340
Cell: 519-841-2554
Fax: 888-463-7598
Email: drewblack@jdindustrialsales.com
Website: www.jdindustrialsales.com
Contact: Drew Black

OCPA sponsorship

OCPA Sponsors University of Toronto Concrete Toboggan Team

University of Toronto Toboggan Team

OCPA was a sponsor of this year's University of Toronto Toboggan Team. Race Day took place at Mount Seymour, located just north of Vancouver City. In response to last year's treacherous course, the organizers this year took a more conservative approach, and the 200m course was on the shallow side. Several flat spots along the course, combined with warm sticky snow conditions meant several teams had a hard time even making it across the start line. When U of T's turn came up they put their strongest pushers forward and although they went a little off track, they completed the run and successfully came to a quick stop. After a flawless completion of their second run, U of T qualified to race in the third and final slalom round. With a good start U of T were able to navigate the challenging course with only a single point deducted for clipping the first gate. The team left the race hill in high spirits after achieving its goal of making it down the hill safely.