



EDUCATION

- 2014 Education Program Innovation Centre – Seismic Analysis/Design
- 2013 Canadian Institute of Steel Construction - Industrial Building Design
- 2011 Canada Green Building Council - LEED Green Associate
- 2011 Canadian Welding Bureau - Welding Procedures
- 2009 Education Program Innovation Centre - Steel Connection Design
- 2007 University of Waterloo - Master of Applied Science, Civil Engineering
- 2007 Education Program Innovations Centre - Bridge Inspection
- 2005 University of Waterloo - Bachelor of Applied Science, Structural Engineering

PROFESSIONAL BACKGROUND

- 2011 to present, Q&E Engineering Inc. (Principal)
- 2012 to 2013, Loyalist College, Adjunct Professor (Building Sciences)
- 2010 to 2012, Defence Construction Canada (Professional Services Coordinator)
- 2007 to present, Greer Galloway Group Inc. (Structural Engineer)
- 2005 to 2007, University of Waterloo (Research Assistant)
- 2004 to 2005, Greer Galloway Group Inc. (Engineering Intern)
- 2002-2003, City of Ottawa, Transportation Infrastructures Branch (Field Inspector)
- 2001-2002, City of Hamilton, Water & Wastewater Division (Engineering Intern)

PROFESSIONAL AFFILIATIONS

- Professional Engineers of Ontario
- Ontario Society of Professional Engineers
- Canadian Welding Bureau

PUBLICATIONS

- Tan, Z.Q., & Hansson, C.M., Effect of surface condition on the initial corrosion of galvanized reinforcing steel embedded in concrete. *Corrosion Science*, 2008.

PROJECT EXPERIENCE

Bridges and Culverts

Government Road Bridge – Sanchez Engineering, 2014

Completed the design of a single-span semi-integral structure comprised of steel girders, concrete deck, and abutments founded on concrete caissons.

Project Value: \$1.5M

Inglis Road and Plato Creek Culvert – Sanchez Engineering, 2014

Completed the design of cast-in-place concrete culverts complete with wing walls and cut-off walls. Steel sheet pile cofferdams were also designed for excavation dewatering.

Project Value: \$600K

Township of Central Frontenac, Bridge Rehabilitations & Replacements - 2014/2015

Rehabilitation/replacement of six structures including a Schedule A+ Municipal Class Environmental Assessment, tender documents and detailed design work. Design work included replacement of several

structures with wider culverts as well as the rehabilitation of two concrete bridges.
Project Value: \$2.5M

Collins Creek Bridge – City of Kingston, 2012 - 2014

Rehabilitation design of a two span simply-supported concrete bridge consisting of a composite deck (pre-cast I-girders and reinforced concrete slab) supported on concrete abutments and a center pier. The design included semi-integral conversion, deck and abutment repairs, and jacking of the deck to replace bearing and repair the girder ends.

Project Value: \$3M

Front Road Bridge – City of Kingston, 2012 - 2014

Rehabilitation design of a single-span concrete rigid frame. The rehabilitation included a complete deck replacement and widening to accommodate sidewalk and bike lanes. A large scale dewatering system was required to accommodate substructure work.

Project Value: \$3.5M

Bridge Street Bowstring Bridge – City of Belleville, 2013

Performed detailed inspection of an existing two-span concrete bowstring arch structure and completed a detailed structural evaluation to provide recommendations for rehabilitation and strengthening.

Project Value: \$2.7M

Otonabee River Pedestrian Bridge – City of Peterborough, 2012/2013

Designed a multi-span steel pony truss bridge with a combined length of over 140 meters. The design included the widening of existing concrete and masonry substructure on steel piles. The project also included the rehabilitation of the multi-span steel through trusses for the existing CP Rail Bridge sharing the same substructure. The new structure was designed to meet stringent vibration requirements.

Project Value: \$3M

Verulum Bridge Rehabilitation – County of Peterborough, 2013

Completed a detailed rehabilitation design for a three-span timber bridge. The scope of work included replacement of existing pier footings and abutments and repairs to the timber deck and barriers.

Project Value: \$300K

Bay Bridge Road CPR Bridge – City of Belleville, 2012 - 2014

Designed a single span rigid frame structure carrying 5 vehicular lanes and 2 pedestrian walkways. The structure consists of a pre-cast box girder composite concrete deck and cast-in-place concrete substructure founded on bedrock. The new structure replaced a former 3 span structure. The new structure also included large concrete retaining walls for embankment stabilization.

Project Value: \$10M

Wawa Creek Bridge – Town of Wawa, 2012 - 2013

Completed emergency inspection and load evaluation of a single-span timber truss bridge. The outcome of the evaluation lead to replacement design of a single-span integral structure comprised of steel girders, concrete deck and abutments founded on flexible pile foundations.

Project Value: \$1.5M

Silver Falls Bridge – Town of Wawa, 2012 - 2013

Completed emergency inspection and load evaluation of a two-span timber truss bridge. The outcome of the evaluation lead to replacement design of a two-span continuous structure comprised of steel girders, concrete deck, supported by abutments and a center pier founded on bedrock.

Project Value: \$2M

CPR Overhead Bridge – Municipality of Port Hope, 2013

Completed a detailed inspection (using a bridge master) of a three-span pre-stressed concrete girder bridge to facilitate rehabilitation design.

Trent River Bridge – County of Northumberland, 2013

Completed a detailed inspection (using a bridge master) of a five-span pre-stressed girder bridge to facilitate rehabilitation design.

Lochinvar Bridge Replacement – Township of North Glengary, 2013

Completed a detailed design of a single span CSP culvert supported on pile foundations.

Project Value: \$600K

Stohn Dam and Spillway Bridge Rehabilitation – Sanchez Engineering, 2012

Completed detailed rehabilitation design for the spillway channel and bridge substructure, new steel barriers and steel grating deck.

Project Value: \$300K

Finch Dam Spillway Bridge Detailed Inspection – Metropolitan and Toronto Region Conservation Authority, 2011

Completed a detailed visual inspection (using a bridge master) of two pre-stressed concrete girder bridges. The scope of work included the preparation of a repair cost estimate and maintenance recommendations.

Paul Clement Bridge Replacement – Municipality of Tweed, 2010

Designed replacement of single-span bridge. The new structure consists of a semi-integral steel/concrete deck supported by concrete abutments and steel piles.

Project Value: \$1.5M

Scott's Mill Bridge Replacement – County of Prince Edward, 2010

Designed a single-span CSP bridge crossing over water. The designed included mechanically stabilized earth retaining walls and concrete strip footings founded on bedrock.

Project Value: \$800K

Moira Road Bridge Rehabilitation – Municipality of Centre Hastings, 2010

Designed the rehabilitation of a three-span pre-cast pre-stressed concrete bridge. The scope of work included repairs to deteriorated pre-stressed girder ends, application of cathodic protection, deck top structural repairs, joint replacement, and barrier structural repairs. Preliminary design of semi-integral conversion was completed but funding was not available to implement.

Project Value: \$600K

Sutton Road Bridge Replacement – Township of Tudor and Cashel, 2009/2010

Designed the replacement of a single-span bridge, consisting of a semi-integral steel/concrete deck supported by concrete abutments and steel piles.

Project Value: \$1.5M

Huntsville Pedestrian Bridges – Town of Huntsville, 2009

Completed a preliminary structural design of a steel truss pedestrian bridge in excess of 90m in span. The preliminary design was focused on satisfying live load induced vibrations.

Belleville Veteran Memorial Bridge – City of Belleville, 2010

Quality verification engineer for the construction of a new two-span semi-integral concrete/steel composite bridge.

Project Value: \$10+M

Moir River Bridge Rehabilitation, Ministry of Transportation, 2010

Quality verification engineer for the rehabilitation of a multi-span concrete/steel composite structure.

Project Value: \$3M

Havelock Dam – Township of Havelock-Belmont-Methuen, 2008/2010

Completed the design of a reinforced concrete dam complete with wingwalls and sheet piling for seepage prevention.

Project Value: \$800K

Black Rapids Bridge Rehabilitation - Township of Leeds & the Thousand Islands, 2009

Completed a detailed design of a new steel/timber deck complete with new traffic barriers. The new deck was widened to accommodate Township maintenance vehicles.

Project Value: \$200K

Russel Road Bridge Replacement – Township of Leeds & the Thousand Islands, 2007/2008

Replacement of a two span concrete/steel bridge. The new structure consists of a semi-integral steel/concrete deck supported by concrete abutments and steel piles.

Project Value: \$1.1M

Quality Verification – 2007-2014

Quality Verification Engineer (QVE) for contractors to ensure successful completion of several MTO and Municipal bridges.

Biennial/Detail Structural Inspection – 2007-2013

Completed inspection and evaluation of hundreds of bridges, culverts, retaining walls, wharfs, and buildings.

Buildings

Starbucks Belleville – Daniel Johnson Architects Inc., 2014

Completed a detailed structural inspection and evaluation of an existing timber/masonry building to accommodate the proposed store layout and mechanical equipment.

Project Value: \$400K

Fabric Land Ottawa – 2014

Completed structural design of new single story retail building including reinforced concrete foundations, steel moment frames, new marquee, roof structure, retaining walls, loading ramps, etc.

Project Value: \$700K

Deseronto Waste Water Treatment Plant Expansion – Town of Deseronto, 2014

Completed structural design of several new reinforced concrete tanks for waste water and sludge containment as well as a new head works building housing numerous concrete tanks and channels. The project also included miscellaneous building additions and retrofits to accommodate mechanical upgrades.

Project Value: \$8M

Harry J Clarke Public School Addition - 2013

Completed structural design of a 10,000 square foot masonry addition to the existing school. The new

addition included a concrete foundation, masonry walls and a steel roof structure.
Project Value: \$2.5M

Collins/Jones Residence – 2013

Completed structural design of an 8000 square foot upscale custom residence. Key features of the building included double stud walls, atrium, and tall walls to accommodate large window glazing.

Project Value: \$2M

Sandbanks Summer Village - 2013

Completed structural design for numerous cottage models and retaining walls for slope stabilization. Caisson foundations were designed to reduce foundation cost.

Project Value: \$200K to 500K per unit

Kouri's Kopters Visitor Center and Hanger – 2013

Completed structural design of timber frame building and foundations for a pre-engineered steel building.

Project Value: \$1M

Impacto Warehouse Repairs – 2013

Completed structural design of repairs to damaged masonry wall, loading dock components, and temporary shoring for the roof structure.

Project Value: \$30K

Well's Ford Dealership Addition and Renovation – 2013

Designed retrofits for the existing roof structure to accommodate a new canopy and re-roofing, an addition consisting of steel moment frames, reinforced concrete substructure, new barrier free access ramps, mezzanines, and a steel tower marquee.

Project Value: \$650K

Kingston Harvey's - 2013

Designed the renovation/repurposing of an existing building. Work included analysis of new roof loads and reinforcement of existing joists, design of lintels for new openings, and commitment to review.

Myer's Pier - 2013

Designed the rehabilitation of the multipurpose building. Work included replacement of existing timber columns with new timber/steel columns, replacement of deteriorated beams, tender preparation and contract administration.

Fabric Land Belleville - 2013

Completed structural design of a single story addition including reinforced concrete foundations, steel moment frames, new marquee, and roof structure.

Eastcourt Cornwall – 2012/2013

Lead structural engineer for renovation/repurpose of existing 'Zellers' building. Work included analysis of new roof loads and reinforcement of existing joists, design of lintels for new openings, design of four new storefront marquees, column splice designs, demolition design for removal of existing mezzanine, design of new reinforced concrete loading docks and scissor lifts, design of new entrance foundation walls, design of new shopping cart vestibule, and commitment to review.

Bob's Esso Warehouse Building – 2012

Completed structural design of a single story industrial building including reinforced concrete foundations, column piers, lateral force resisting system, and a mezzanine structure.

Resthaven Memorial Gardens – 2012

Completed structural repairs to a pre-engineered steel building including repairs to column anchorage, moment splice of steel columns, and replacement of girts.

Air Mobility Training Centre – Department of National Defence, 2010/2011

Acted as the professional services coordinator for the design/construction of a LEED Gold multi-story building.

Project Value: \$65+M

Electrical/Mechanical Engineering & Transportation Building CFB Trenton – Department of National Defence, 2010/2011

Acted as the professional services coordinator for the design/construction of a high end multi-story building.

Project Value: \$30+M

Aerospace and Telecommunications Engineering Support Squadron's (ATESS) refinishing shop CFB Trenton – Department of National Defence, 2010/2011

Acted as the professional services coordinator for the design/construction of a high end multi-story building.

Project Value: \$30+M

Smiths Fall Sludge Storage Tank – Township of Smiths Fall, 2009/2010

Completed the design of a reinforced concrete sludge storage tank, a head works building, and miscellaneous structural components for the waste treatment plant upgrade.

Project Value: \$4M

Miscellaneous Structural Projects

Lafarge Coal Bin Replacement – Lafarge Bath, 2014

Completed structural assessment of an existing coal storage bin (weighing over 750 tons) and support structural to facilitate replacement of the existing bin. Provided procedure engineering for the bin replacement, design of the new bin and structural upgrades to meet current seismic load requirements.

Empey Bridge Demolition – MJ Davenport and Associates, 2014

Provided detailed procedures for the demolition of an existing steel truss bridge to meet health and safety and environmental requirements.

Well's Ford Dealership Marquee – 2013/2014

Designed three dimensional steel truss towers for a marquee. The new marquee was integrated with the building through a new steel canopy structure. New reinforced concrete piers and footings were designed to support the marquee structure.

Kovas Dock – 2013

Completed structural design of a fixed steel dock to withstand wave actions and ice pressure. Concrete piers and adjustable steel piles were designed to support the new dock.

VVIP Accommodations CFB Trenton – 2013

Designed a temporary shoring system to accommodate structural modifications to an existing building.

Neuburg Residence – 2012

Completed the design of reinforced concrete foundations, footings, retaining, and heavy timber roof



structure for a new custom residence.

Building Structural Evaluation – 2007-Present

Completed numerous structural evaluations and retrofits for existing buildings to accommodate photovoltaic (ranged from 10kW to 500kW) and solar collector systems installations.

Church Street Retaining Wall – City of Belleville, 2009

Complete design a segmental concrete retaining wall for slope stabilization.