

Township of Laurentian Valley Public Works Facility

Location:	Pembroke, Ontario
Client & Owner	Township of Laurentian Valley
Duration:	March 2015 - September 2016
Value:	\$3M
Services:	Civil Engineering Mechanical Engineering Electrical Engineering Structural Engineering

The Township of Laurentian Valley Public Works Facility consists of a 4,200 ton sand storage facility; a 13,000 ft², 10-bay, pre-engineered works garage; and 3,000 ft² of new works administrative office space. Opened in October 2016, the new Public Works Facility consolidates the two existing Township offices into one expanded, 8 acre property located at 460 Witt Road.

Jp2g Consultants Inc. was retained by the Township of Laurentian Valley to provide complete civil, mechanical, electrical, and structural engineering services. Jp2g accommodated the Township's tight time frame to have the sand storage facility completed in time to provide temporary storage for winter maintenance equipment.

The new works administrative office space is a wood frame, truss roof structure with a brick veneer and steel siding exterior. It is fully barrier free accessible and is comprised of three offices, a locker room, a shower area, washrooms, and a 600 ft² combination lunchroom / classroom for works crew training. A fire-rated room was created to accommodate file and archive storage. The new works office is connected to the existing general office space, making the entire Township complex fully functional under one roof.

Key features of Jp2g's design included:

Civil

- Site plan drawings based on the client's preferred layout, including parking for 15 vehicles
- Detailed site servicing and grading plans
- Stormwater management reports and plans

Mechanical

- Energy-efficient radiant floor heating
- Two high-efficiency condensing boilers and two main circulating pumps with sensor-less VFDs
- Primary-secondary variable flow hydronic heating
- Constant-air-volume multi-zone HVAC system in office areas, with duct-mounted hydronic reheat coils and temperature sensors for individual zones
- General ventilation system in the garage including an exhaust fan and makeup air unit; a local ventilation system (vehicle exhaust extraction system); and a gas detection/monitoring system

Electrical

- LED lighting (interior and exterior lighting systems including parking lot lighting)
- Interior and exterior signage
- Building access control system
- Provisions within the main incoming power switchboard to facilitate the addition of a future outdoor, mounted emergency power generator

Structural

- Foundation slab and structural modifications to the existing 5-bay garage being relocated
- Reinforced concrete footings, piers, and walls for installation of new pre-engineered metal garage
- Reinforced concrete foundation walls for the wood-framed office portion of the building
- Garage and office concrete floor slab
- Wood-framed office superstructure including stud and shear walls, roof truss system, and diaphragm

