

## City of Calgary

The City of Calgary operates three (3) wastewater treatment facilities to service the needs of over 1.1 million residents. With current sludge storage at capacity, the City decided to construct a new dewatering building at the Bonnybrook Wastewater Treatment Plant (WWTP), the largest WWTP in the City. The facility will provide a year-round biosolids dewatering solution that supports their strategy of diversified beneficial use programs for biosolids produced by WWTP. The facility will be located adjacent to the existing WWTP and will receive digested sludge (biosolids) from the plant.

The project began in 2013 when Eramosa, as a subconsultant to CH2M Hill Canada, started development of the conceptual design of the new plant as part of the City's new composting initiatives. Under this assignment, Eramosa was responsible for

both the electrical, and the instrumentation and control design of the new facility. As part of the conceptual design deliverables, Eramosa completed a review of the WWTP electrical distribution to allow for the servicing of the new dewatering facility from the WWTP via a new 4160 V sub feed from the plant's power distribution system.

As a continuation of the conceptual design phase of the project, Eramosa completed the functional and detailed designs of the new facility. Our team was responsible for the full design of the electrical, standby power, instrumentation and control, smart instrumentation, DCS, security, and network aspects of the new five-story building and associated support infrastructure. All designs followed City standards for electrical and instrumentation systems.

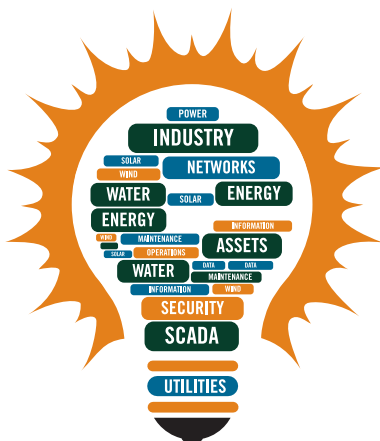
The new building includes a standby generator to handle critical elements of the process to maintain life/safety components should a power failure occur and to provide power to the wastewater plant emergency operations centre which is located inside the building. In addition to the generator, the facility electrical system includes two (2) automatic transfer switches, three (3) motor control centers (MCCs), switch gear, and a facility

uninterruptible power supply (UPS) feeding key components. Three (3) centrifuges of 200 HP each are the main process components to be installed with enough space for a fourth in future.

Eramosa completed the instrumentation and control design work for the facility which included design of the process instrumentation system, distributed control system (DCS) architecture, security system, and process camera system. Items will be integrated into the plant's DeltaV DCS system. PROFIBUS and Modbus TCP/IP networks will be used to communicate to multiple devices. There are nine (9) plant DCS panels and seven (7) preselected DCS panels for the project.

There are over 380 instruments to be installed as part of this project. The control room is being constructed on the fourth floor of the facility. Construction of the dewatering building commenced in February 2016 and is expected to be substantially complete (Phase 1 commissioning successfully completed by the contractor) by September 2017. The project has an estimated capital cost of \$85 Million.

Eramosa's team is a natural fit for completing services during construction (SDC) due to their conceptual design experience with the project.



## services

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