



Award of Merit

Ladysmith Wastewater Treatment Plant



Consultant

WSP | Opus

Owner/Client

Town of Ladysmith

Category

Municipal and Civil Infrastructure

For more information, please contact:

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Municipal wastewater discharge was polluting Ladysmith Harbour, a sensitive receiving environment valuable to the local community, First Nations and the shellfish industry. The Town of Ladysmith required a treatment strategy that would satisfy environmental regulations and serve a growing population.

The Town completed a staged Liquid Waste Management Plan (LWMP), which was approved by the BC Ministry of Environment in 2013. WSP | Opus facilitated the LWMP process which involved extensive consultation and outlined the roadmap for the Town's upgrade program, establishing key requirements, capacities and commitments.

As Prime Consultant, WSP | Opus designed all phases of the upgrade. Phase 3 was completed in 2017 and included the construction of a new multi-level building, enclosing the secondary treatment processes with optimal odour control. The new building also includes integrated administration, laboratory and workshop facilities. The available construction footprint was very restricted, which led to the selection of the Moving Bed Biofilm Reactor (MBBR) process with Dissolved Air Flotation (DAF) for solids separation, providing high quality treatment in a compact area. This is the first time a MBBR-DAF combination has been used for municipal wastewater treatment in Western Canada.

Numerous sustainability initiatives were incorporated into the design including solar energy, effluent heat recovery for building heating and cooling, and reclaimed water for irrigation and non-potable plant use.

The quality of the treated effluent has vastly improved as a result of the upgrade, with Biological Oxygen Demand (BOD) removal improving from 54% to 98%, and Total Suspended Solids (TSS) removal improving from 70% to 98%.