FILTRUM
CONSTRUCTION

Process mechanics

Piping

Electricity, automatization & instrumentation

Design and manufacture of control panels

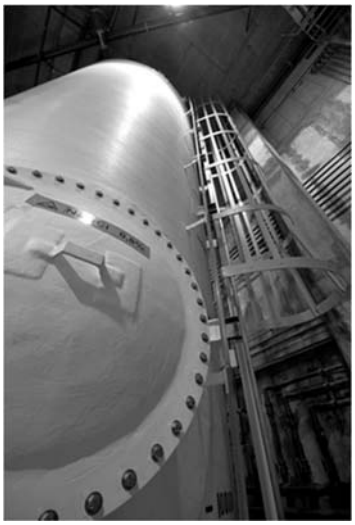
For more than a quarter century, Filtrum Construction's customer satisfaction has set it apart. Specialized in water and wastewater treatment, we carry out our projects with extreme attention to detail and remarkable efficiency. From equipment supply to installation and commissioning, we can put solutions to work for all your water problems.

ISO 9001

www.filtrum.ca

FILTRUM
CONSTRUCTION

INTEGRATOR
WATER AND WASTEWATER TREATMENT



Complete mechanical, electrical, instrumentation and automation solutions for water treatment. A team of experienced engineers, technicians, programmers, electricians, pipe fitters and millwrights. Between 100 and 200 projects completed each year.

- Founded in 1980 by Denis Pouliot, Eng.
- Grew from 3 employees in 1980 to 85 employees in 2007.
- Founder retired in 2007, replaced by Francois Noel, Eng., project manager since 1989.
- Currently owned by a group of 9 employees.
- Grew to 101 employees in 2015.
- Head office in Quebec City with branches in the Montreal area and Halifax, NS.
- 35 years experience in water and wastewater treatment
- Active in municipal and industrial markets.
- Employ teams of pipefitters, millwrights, electricians, and I&C technicians.
- In house control panel manufacturing with PLC integration/programming.
- In-house stainless steel piping welding shop, capacity from 12mm to 1500mm diameter pipe.
- Operate as a sub-contractor or general contractor depending on the scope of the project.

Address:

Headquarters (Quebec)
430, des Entrepreneurs Street
Québec (Québec)
G1M 1B3

Montreal
3500, 1ST Street
St-Hubert (Quebec)
J3Y 8Y5

Nova Scotia
1959, Upper Water Street
Suite 1301
Halifax (NS)
B3J 3N2

FILTRUM
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Sectors of Interest

- Treatment of industrial effluent
- Process water purification
- Municipal wastewater treatment
- Municipal water purification
- Biogas generation from solid waste, effluent or wastewater sludge.

SERVICES:

MECHANICAL PROCESS/PIPING

Water Treatment:

- Clarifiers
    - High Rate Clarifiers (Ballasted or Solids Contact)
    - Packaged Clarification Units
- Membrane Filtration Systems
    - Pressurized Ultrafiltration/microfiltration
    - Submerged Membranes
    - RO
- DAF
    - High Speed DAF
- Gravity Filters
    - False Floor with Nozzles or Phoenix Underdrain System
    - Sand, Anthracite and Activated Carbon

- Pressurized Filters
    - Green Sand Filtration
    - Water Softener
    - Activated Carbon Filtration
- Ozone Generation Systems
- On Site Hypochlorite Generation Systems

Wastewater Treatment:

- Clarifiers
    - Circular Type, Primary or Secondary Treatment
- Activated Sludge
    - Aeration Systems for High or Low Rate
- Lagoons
    - Fine or Coarse Bubbles Air Diffusion
- DAF
    - Complete Packaged Units
    - Gas Energy Mixing System

- MBR
    - Compact Packaged MBR Units
- SBR
    - Complete Plant With Process and Control Systems
- MBBR
    - Complete Aeration System with Basins and Media

ELECTRICAL WORKS

- Process related electrical work
    - MCC installation
    - Motor Starter and VFD installation
    - All wiring
    - Generator System
- Control Systems
    - Control Panels manufacturing
    - PLC and HMI integration and programming
    - SCADA and Telemetry implementation

FILTRUM CONSTRUCTION

Quality Control

Filtrum Construction carries out every contract with the same approach - a combination of expertise and partnership. It did not take long for the company's name – synonymous with rigor and efficiency – to become the standard for quality within the industry. Filtrum Construction's staff pay as much attention to superior customer relations as they do to compliance of drawings and specifications.

Management reviews are held frequently throughout the year to review the company's quality control program. These reviews evaluate compliance with quality policies. Filtrum examines the extent to which goals are achieved and relevant to the program. Filtrum looks for opportunities to improve and if necessary, to modify the quality management system and its efficiency.

Filtrum Construction creates mechanisms that allow for a methodical and impartial evaluation as well as the verification of all activities related to the quality program when it comes to:

- Compliance with the rules and procedures
- Staff's understanding
- Program efficiency.

Filtrum Construction addresses all non-compliance cases to avoid the use or shipment of a non-compliant product. The company discontinues supply of that product to avoid providing non-compliant services to a client. With corrective actions, Filtrum ensures that the client's complaints and nonconformities are evaluated according to the significance of the matter and in reference to the undertaken risk. The company creates a permanent solution in order to prevent a new or recurring nonconformity situation.

Filtrum Construction's management is highly concerned with its workers' health and safety. In turn, the Quebec Construction Association's prevention consultant was asked by the company to audit Filtrum Construction's Occupational Health and Safety practices to ensure they exercise due care on all types of work performed. This practice is carried forward to conform with all OH&S regulations in all other country where Filtrum works, and will most certainly be adopted and adapted to conform to all regulations.

Filtrum Construction is proactive and organized when it comes to its workers' training. A training and certification software program lists the training that a worker has received and includes a scan of his certificates as well as the expiration date of that training and certification. This software also allows for good resource management based on the work to be done. For example, when confined space work is required, the system can identify the workers who received the relevant training. Those workers will then be assigned to that job and the employer ensures they have the proper equipment and training for that job.

One of the company's project managers is also the OHS coordinator. In addition to the responsibilities linked to the project management role, he also performs the following tasks:

- health and safety orientation for new workers
- organizes training
- regularly updates the prevention program
- follows up on accident reports and analysis
- performs site inspections
- compiles health and safety statistics/reports and meets with all workers on a quarterly basis.

A jobsite inspection program was instituted by Filtrum Construction. Each foreman and project manager must visit 4 jobsites per year which amount to approximately 70 inspections conducted annually. These visits involve the completion of an inspection worksheet which then gets added to a registry. The OHS coordinator can later analyse them, identify any issues and take any corrective actions.

FILTRUM CONSTRUCTION

Project List

Ville de Montréal	Montreal, QC	Pointe-Claire Plant - Valve and automation	2012	2 200 000,00
Ville de Waterville	Waterville, QC	Membrane Water treatment system	2013	2 100 000,00
Municipalité de St-Charles-Borromée	St-Charles-Borromée, QC	Water Treatment Plant Upgrades - Ozonation and Filtration	2012	1 600 000,00
Conseil des Innus de Pessamit	Pessamit, QC	Water filtration plant upgrades	2013	1 400 000,00
Première Nation de Whapmagoostui	Whapmagoostui, QC	Water pumping station	2012	1 400 000,00
Ville de Laval	Laval, QC	Ste-Dorothée - Pumping station	2013	1 300 000,00
Ville de Grande-Rivière	Grande-Rivière, QC	Membrane WTP Water supply - Lot 2	2012	1 300 000,00
Montréal Usine Atwater	Montreal, QC	Montréal Atwater - Plant automation	2012	1 200 000,00
Ville de St-Lazare	St-Lazare, QC	Ste-Angélique - Water treatment plant equipment supply and inst.	2012	900 000,00
Town of Grand Falls-Windsor	Town of Grand Falls-Windsor, NL	Exploits Regional WTP - Hydrated Lime Upgrade	2013	800 000,00
Ville de St-Lazare	St-Lazare, QC	Ste-Angélique - Water treatment plant upgrades	2012	800 000,00
Ville de St-Pamphile	St-Pamphile, QC	Water supply upgrades	2013	700 000,00
Halifax Régional Water Commission	Halifax, NS	J.D. Kline Water Treatment Plant - Chlorination System Upgrades	2014	600 000,00
Ministère des Transports du Québec	Dorval, Montréal, QC	Supply and installation of generator	2013	600 000,00
Ville de St-Lazare	St-Lazare, QC	Ste-Angélique - Water treatment plant upgrades	2012	600 000,00
Ville de Montréal	Montréal, QC	Marcel Laurin - Booster station upgrade	2013	500 000,00
Ville de Chibougamau	Chibougamau, QC	Reconstruction of the Dufresne booster station	2012	500 000,00
Administration Régionale Kativik	Umiujaq, QC	Water supply	2012	500 000,00
Municipalité de Pointe-Lebel	Pointe-Lebel, QC	Water treatment upgrades - Phase 2	2013	400 000,00
Municipalité de St-Alexandre	St-Alexandre, QC	Water treatment plant modification	2013	400 000,00
Conseil des Innus de Pessamit	Betsiamites, QC	Water supply - Phase 1	2013	400 000,00

Conseil de la Nation Anishnabe du Lac-Simon	Lac Simon, QC	Water treatment controls upgrades	2013	300 000,00
Ville de Lévis	Lévis secteur Pintendre, QC	Fire protection upgrades	2012	300 000,00
Municipalité de Baie-Trinité	Baie-Trinité, QC	Water production facilities upgrades	2013	200 000,00
Municipalité de St-Philippe-de-Néri	St-Philippe-de-Néri, QC	Water supply improvements	2013	200 000,00
Municipalité de Landrienne	Landrienne, QC	Water pumping station modernization	2013	200 000,00
Municipalité de Rivière-au-Tonnerre	Rivière-au-Tonnerre, QC	Water treatment plant upgrades	2013	200 000,00
Town of Bay de Verde	Bay de Verde, NL	Water systems Upgrapes CP2	2013	200 000,00
Town of Admiral's Beach	Admiral's Beach, NL	Water system Upgrades	2013	200 000,00
Town of Bonavista	Bonavista, NL	Main Pump House Upgrades	2013	200 000,00
Régie de l'Aqueduc Intermunicipale Bas-Richelieu	St-Denis-sur-Richelieu, QC	Membrane Filtration Cell relocation	2012	200 000,00
Ville de Val-d'Or	Val-d'Or, QC	Val-Senneville - Pumping station	2012	200 000,00
Town of Pigeon Cove	Pigeon Cove - St. Barbe, NL	Water supply upgrades - Phase II	2012	200 000,00
Ville de Montréal	Montreal, QC	Atwater Plant - Water supply system canal upgrade	2012	200 000,00
Village of Doaktown	Doaktown, NB	North shore water supply	2012	200 000,00
Ville de Rouyn-Noranda	Rouyn-Noranda, QC	Water Treatment Plant - Filter #2 rebuild	2012	200 000,00
Village of Baker Brook	Baker-Brook, NB	Modification of the Well	2014	100 000,00
Municipalité de La Reine	La Reine, QC	Water treatment system upgrades	2013	100 000,00
Public Works and Government Services Canada	St. Anthony, NL	Pumphouse Upgrades	2013	100 000,00
Municipalité de St-Elzéar	St-Elzéar, QC	Booster pump and control panel replacement	2013	100 000,00
Ville de Montréal	Montreal, QC	Atwater - Actuator replacements	2013	100 000,00
Régie interm. de l'eau Tracy, St-Joseph, St-Roch	Sorel-Tracy, QC	Alum tank installation and sodium hydroxide feed upgrades	2012	100 000,00

Halifax régional Water Commission	Halifax, NS	Bennery Lake High Lift Pump Installation	2012	100 000,00
Municipalité de Notre-Dame-des-Monts	Notre-Dames-des-Monts, QC	Water supply automation	2012	100 000,00
Ville de Montréal	Montreal, QC	Atwater Plant - Contact chamber conversion	2012	90 000,00
Village de Clair (NB)	Clair, NB	Sunnymel - Water supply upgrades	2012	90 000,00
Municipalité de Ste-Monique	Ste-Monique, QC	Booster station upgrades	2012	80 000,00
Municipalité d'Albanel	Albanel, QC	Booster station modernization	2014	70 000,00
Municipalité de St-Jacques-le-Mineur	St-Jacques-le-Mineur, QC	Pumping station	2012	70 000,00
Ville de St-Jean-sur-Richelieu	St-Jean-sur-Richelieu, QC	Replacement of filter piping	2013	60 000,00
Ville de Saguenay	Chicoutimi, QC	Water treatment plant - Chlorinator replacement	2012	60 000,00
Administration Régionale Kativik	Umiujaq, QC	Water supply	2012	60 000,00
Municipalité de Stoneham-et-Tewkesbury	Stoneham-et-Tewkesbury, QC	PP-1 station - Pump replacement	2014	50 000,00
Ville de Châteauguay	Châteauguay, QC	Ile St-Bernard - Pumping station	2013	50 000,00
Ville de St-Lazare	St-Lazare, QC	Control panel and automation	2013	40 000,00
Pagé Construction div. Sintra inc. (Bécancour)	Bécancour, QC	Valve Chambers	2013	40 000,00
Ville de Montréal	Usine Lachine Montréal, QC	Water Distribution System Monitoring - electrical and plumbing	2013	30 000,00
Ville de St-Lazare	St-Lazare, QC	Sampling system	2012	30 000,00
Municipalité de Villeroy	Villeroy, QC	Well 99-2010-ROC controls implementation	2012	30 000,00
Ville de Québec	Quebec City , QC	Water hammer reduction system	2012	30 000,00
Mohawk Council of Kahnawake	Kahnawake, QC	SLS 13 - Valves chamber	2012	20 000,00
Municipalité de Bouchette	Bouchette, QC	Control panel upgrade	2013	10 000,00

FILTRUM CONSTRUCTION

RELEVANT MAJOR PROJECTS COMPLETED AS PRIME CONTRACTOR IN THE PAST FIVE YEARS

PROJECT: Kahnawake (Qc) WTP	OWNER: Mohawk Council of Kahnawake	ENGINEER: First Nations Engineering Ser Ltd
	CONTACT: Frank Deere	CONTACT: Jeffrey Powless
VALUE: 1.2 M $	TEL: +1-450-635-1016	TEL: +1-519-445-0040

PROJECT DETAILS (Including major work items, construction start and completion date, etc.):

Const.start: February 2011
Completion date: Dec 2011

New Membranes Filtration System, 14 000m3/day

Filtrum did the all the M&E and control works on this project. Filtrum worked hard with the Engineer and the Council to come up with a very friendly user layout.

PROJECT: EBI Biogas (Qc)	OWNER: EBI Énergie inc.	ENGINEER: Aecom Tecsult
	CONTACT: Luc Turcotte	CONTACT: André Binette
VALUE: 3.9 M $	TEL: +1-450-836-8111	TEL: +1-450-967-1260

PROJECT DETAILS (Including major work items, construction start and completion date, etc.):

Const.start: Novembre 2011
Completion date: June 2012

EBI Biogas generators power plant - Plant capacity: 10 megawatts
Filtrum played a very important role in this real fast track project. In fact it took only 6 months from mobilisation to fully completion and plant running at a capacity of 100%; 24/7. Filtrum installed 7 biogas power generators and all associated equipment. Filtrum supplied and installed the complete piping network of biogas, exhausts, chimneys, lubricant system, glycol cooling system, etc. FIltrum provided, installed and wired also all the controls. EBI had a very restrained schedule and Filtrum proved they were the right choice. EBI has now a 25 years 10 megawatts contract with Hydro-Québec.

PROJECT: Cornwall (Ont) WTP	OWNER: City of Cornwall	ENGINEER: Aecom
	CONTACT: Owen O'Keefe	CONTACT: Hassan Erfanirad
VALUE: 1.2 M$	TEL: +1-613-930-2787	TEL: +1-905-668-4021

PROJECT DETAILS (Including major work items, construction start and completion date, etc.):

Const.start: August 2011
Completion date: May 2012

Two Filters Upgrade at the WTP
Replacement of filtration system and valves.
Cornwall Water Treatment Plant filters upgrade phase II Filtrum as the general contractor had to replace the existing underdrain filtration system of filter one and two with a new one, including replacing the media, the automated valves, all keeping the plant in operation.

PROJECT: Becancour (Qc) Ozone	OWNER: City of Becancour	ENGINEER: Dessau
	CONTACT: Michel Carbonneau	CONTACT: Christian Desjardins
VALUE: 1.4 M $	TEL: +1-819-233-2147	TEL: +1-514-281-1033

PROJECT DETAILS (Including major work items, construction start and completion date, etc.):

Const.start: September 2012
Completion date: March 2013

Replacement of ozone system

Filtrum dismantled the existing ozone system and replaced it with two new ozone generators capable of producing 70 kg/d , including mechanical, electrical and controls including the scada works related to the system.

PROJECT: Nipigon (Ont) WTP	OWNER: Township of Nipigon	ENGINEER: WSP Canada
	CONTACT: Geoff Aitken	CONTACT: Chris Wilson, P. Eng
VALUE: $ 416,000.00	TEL: +1-807-887-3135	TEL: +1-519-376-7612 #13208

PROJECT DETAILS (Including major work items, construction start and completion date, etc.):

Const.start: June 2015
Completion date: September 2015

Replacement of valves and Automation of the Filtration System

Our contract was to perform work to complete the automation of the filtration system by replacing all the existing valves with new automated valves and controls with an updated system, while keeping the plant in operation. Civil work was also involved when replacing underground piping.

FILTRUM CONSTRUCTION

CURRENT PROJECTS UNDER CONSTRUCTION

PROJECT: St-Hyacinthe (QC)	OWNER: City of St-Hyacinthe	ENGINEER: The city
	CONTACT: 450-778-5838	CONTACT:
VALUE: 25.2 M $	TEL: +1-450-778-5838	TEL:

PROJECT DETAILS (Including major work items, construction start and anticipated completion date, etc.): Const. Start: September 2015

WW Digesters biogas plant - Capacity: 3 300 m3/hr of biogas

Anticipated Comp. date: December 2016

The City of St-Hyacinthe awarded us the complete realization of their second phase of their important biogas production project. This project includes five (5) new digesters 2 000m3, three (3) liquid organic matter tanks 200 m3, one (1) whey tank 3 650 m3, new building to received two (2) 250 BHP hot water boilers and a digested sludge batch pasteurization system, a new 3 300 m3/hr capacity flare and all the related civil work. This project is one of the biogas system to be built in the province of Québec. The start-up is scheduled to begin in September 2016 for a duration of three (3) months. Under normal production, the biogas generated will be sufficient for the needs of the plant and 2 500 m3/hr will be sold to Gaz Métro.

PROJECT: Baie-Comeau (Qc)	OWNER: City of Baie-Comeau	ENGINEER: Roche
	CONTACT: Michel Dionne	CONTACT:
VALUE: 7.3 M $	TEL: +1-418-296-8334	TEL: +1-418-654-9600

PROJECT DETAILS (Including major work items, construction start and anticipated completion date, etc.): Const. Start: Spring 2016

WTP - Capacity: Avg 15 MLD

Anticipated Comp. date: Fall 2017

The town of Baie-Comeau, will build a brand new WTP. The mechanical process have been awarded in two different lot to FIltrum. The first lot is basically the engineering, the supply, the installation, commissioning and start-up of the filtration system. Filtrum is providing GE membranes technology. The second lot covers all the related and associated process mechanical work like the chemicals, the pumps, the reservoirs and pre –treatment. Filtrum will be process mechanical sub-contractor.

PROJECT: Levis - Charny (Qc) WTP	OWNER: City of Levis	ENGINEER: Roche
	CONTACT: Louis Dodier	CONTACT: Gaétan Morin
VALUE: 8.9 M$	TEL: +1-418 835-8541	TEL: +1-418-654-9696 #28204

PROJECT DETAILS (Including major work items, construction start and anticipated completion date, etc.): Const. Start: March 2015

Filtrum is the general contractor on this project: Basically, this project is a capacity upgrade and an overall refurbishing of the plant. Addition of two (2) new sand filters AWI type, remove and install brand new complete ozone generation and injection system. Change gas chlorine disinfection system by a new liquid hypochlorite system. Change the batch preparation polymer system. Upgrade the UV system. Change the three (3) raw water pumps, change one distribution pump, interconnect the three (3) reservoirs. The challenge in this project is to always keep the plant running and respect the very restrictive shut down windows while adapting the schedule in order to avoid winter condition works.

Anticipated Comp. date: September 2016

PROJECT: Levis - St-Nicolas (Qc) WWTP	OWNER: City of Levis	ENGINEER: Roche
	CONTACT: Louis Dodier	CONTACT: Gaétan Morin
VALUE: 2,9 M $	TEL: +1-418 835-8541	TEL: +1-418-654-9696 #28204

PROJECT DETAILS (Including major work items, construction start and anticipated completion date, etc.): Const. Start: September 2015

Filtrum is the general contractor. This project is basically the addition of a DAF and many upgrades like replacement of sludge pumps, replacement of polymer pumps, replacement of chlorinated water (for service water), replacement of recycled pumps and strainers. This includes a new building for the new DAF system.
The challenge is to keep the plant running all the time and deal with very restrictive shut-down windows.

Anticipated Comp. date: September 2016

PROJECT: St-Jean-sur-Richelieu (Qc)	OWNER: City of St-Jean-sur-Richelieu	ENGINEER: SNC-Lavalin
	CONTACT: Eric Desbiens	CONTACT: Paul Williams, ing.
VALUE: 1.9 M$	TEL: +1-450-359-2439 poste 2274	TEL: +1-514-393-8000 x 54996

PROJECT DETAILS (Including major work items, construction start and anticipated completion date, etc.): Const. Start: May 2015

Supply and installation of oxygen generators and ozone generators. Mechanical and Electrical work.
The project schedule was very short therefore the major challenge was completing in time while adhering to the strict design and execution plans that were developed.
Plant Capacity: 84,000 m3/day
Primary Equipment Installation: Two (2) oxygen generators and two (2) ozone generators.

Anticipated Comp. date: Dec 2015

FILTRUM
CONSTRUCTION

PROJECTS COMPLETED

PROJECT: Corner Brook (NL) WTP	OWNER: City of Corner Brook	ENGINEER: CBCL Limited
	CONTACT: Erik Neilson	CONTACT: Mike Chaulk
VALUE: 4.6 M$	TEL: +1-709-637-1638	TEL: +1-902-421-7241 x2499

PROJECT DETAILS (Including major work items, construction start and completion date, etc.): Construction start: May 2013
Completion date: November 2014

Capacity: 30 MLD

Filtrum was part of the design-built team with Pomerleau and JLR. FIltrum was the process M&E and the process controls contractor. Filtrum installed pre-purchased pre and main filtration treatment equipment provided by Leopold. Filtrum provided and installed all the peripherals equipment such as VTP, chemicals (coagulant, polymer, soda ash, inhibitor), gas chlorine disinfection system, UV's, piping, valves, MCC, control panels, SCADA, wiring, commissioning and start-up.

PROJECT: Ste-Marie (QC)	OWNER: City of Ste-Marie	ENGINEER: Roche ltd
	CONTACT: Bruno Gilbert	CONTACT: Gaetan Morin
VALUE: 8.5 M$	TEL: +1-418-387-2301	TEL: +1-418-654-9600

PROJECT DETAILS (Including major work items, construction start and completion date, etc.): Construction start: January 2009
Completion date: May 2010

This project was awarded to Filtrum for mechanical and automation work. The city of Ste-Marie had to build a new water treatment plant capable of producing 12 000m3/d. Heart of the plant is a membrane filtration system provided by GE and installed by Filtrum. Turbine pumps, inline filters, uv and ozone systems were the main equipments supplied, installed and commissioned by Filtrum. Collaboration of engineers and plant operators made this project a proud achievement for Filtrum.

PROJECT: Gatineau - Aylmer (Qc)	OWNER: City of Gatineau	ENGINEER: Roche Ltd
	CONTACT: Gilbert Abou-Zeid	CONTACT: Gaétan Morin
VALUE: 7.7 M$	TEL: +1-819-243-2345	TEL: +1-418-654-9600

PROJECT DETAILS (Including major work items, construction start and completion date, etc.): Construction start: July 2009
Completion date: May 2011

Aylmer WTP upgrade from 22 000 to 48 000 m3/d. This project was one of our most complex challenge as we had to keep the plant fully operational during all phases of work. Collaboration of plant operators was a key asset in successfully achieving this goal. Filtration system consisting of building two new filters 6 and 7 and replacing underdrain and media for filters 3, 4 and 5. An ozone system was added and new chemical tanks and dosing systems and an onsite chlorination system were integrated to the plant upgrade. Filtrum was hired as a mechanical subcontractor

PROJECT: Valleyfield (Qc) WWTP	OWNER: City of Valleyfield	ENGINEER: Axor
	CONTACT: Michel Brodeur	CONTACT: Francis Dube
VALUE: 16.6 M$	TEL: +1-450-370-4323	TEL: +1-514-846-4000

PROJECT DETAILS (Including major work items, construction start and completion date, etc.): Construction start: August 2013
Completion date: May 2015

Capacity: 80 MLD - Filtrum was the general contractor in this upgrade. Addition of a building to receive new grit removal system, a new Septic Tank Sludge reception system and two (2) new sludge centrifuges system. Rework of existing building to receive new polymer preparation/injection system and two (2) new sludge drum thickners. Rework the aeration basins to add agitators and install new fine bubbles aeration system. Provide and install three (3) new turbo blower. Replace the entire head works. Replace the four (4) secondary clarifiers. Addition of a valves chambers to interconnect the RAS between the clarifiers. Replace three (3) RAS screw pumps. Install new effluent UV treatment. Rework all the offices area, the existing roofing and replace and add new HVAC systems.

The main issue was to keep the plant running and do all the above works with only 5 days of overflowing allowance.

PROJECT: Waskaganish WTP	OWNER: SEBJ	ENGINEER: Genivar
	CONTACT: François Bouchard	CONTACT: Luc Gingras
VALUE: 3.3 M$	TEL: +1-819-895-2425	TEL: +1-514-340-0046

PROJECT DETAILS (Including major work items, construction start and completion date, etc.): Construction start: August 2009
Completion date: January 2010

New membrane WTP

Hydro-Québec had to provide a new WTP to the community of Waskaganish because they had to divert the flow of the Rupert River for a new electrical power plant and the water quality would be affected. They decided to install a membranes facility. FIltrum provided, installed all the process mechanical filtration system, distribution piping, chemicals dosing system, controls and SCADA, commissioning and start-up.

With the very compressed schedule 4 months, Filtrum had to be very efficient to complete the work in time considering the location of the plant.

FILTRUM
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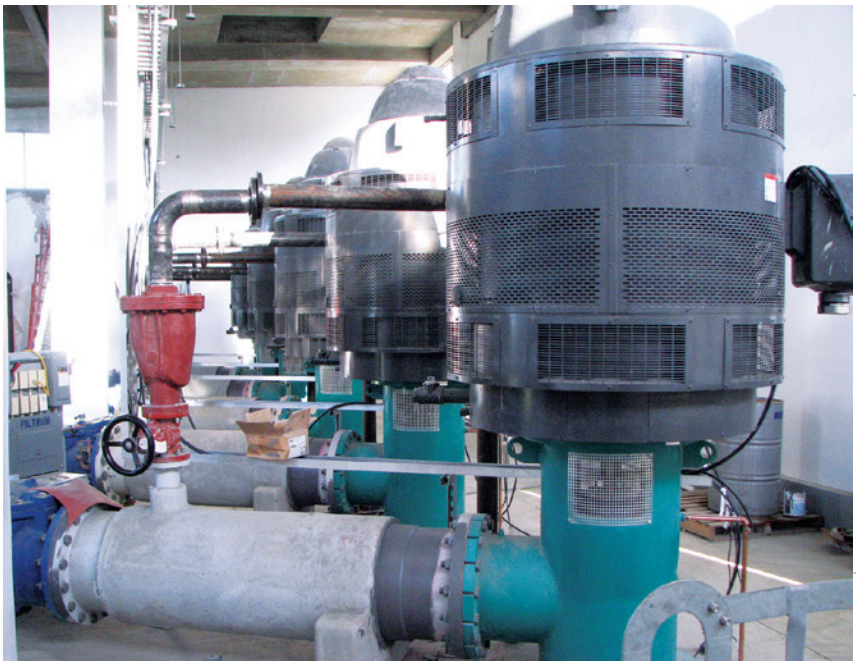
Filtration Plant Water Intake—Dowasco



Barahona - Dominican Republic

Client
Dowasco

Contractor
SNC-Lavalin

Capacity
120,000 m³/day (22,000 USGPM)

Value
1 500 000 $

Description

Filtrum Construction was commissioned by SNC-Lavalin to conduct process mechanical, electrical, and instrumentation and control work for a potable water treatment plant in the Barahona region of the Dominican Republic. Located 220 km west of Santo Domingo, the region set up a water treatment plant with a capacity of 120,000 m³/day. Filtrum was involved in construction of the plant and its core component—a water intake facility equipped with a pumping station.
Five pumps powered by 800 hp electric motors and the associated piping were installed, along with screening and grit removal equipment, an anti-water hammer system and multiple penstocks.

Challenge

Civil engineering work on the water intake was lagging significantly behind schedule. Given that the water intake equipment was essential to starting up the plant, it was necessary to think outside the box so that the project could be completed by the intended date. All metallic piping was prefabricated in our shops. The Hyprescon header tank was manufactured using the fewest sections possible. Everything was assembled on site with the help of cranes that were able to move materials through openings created in the roof. The pumps were also fully assembled in the shop. Only the motors had to be assembled on site by our engineers. Thanks to all these preparations undertaken before the site was ready, we were able to complete construction within an extremely short timeframe.

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430, des Entrepreneurs Street, Quebec City, QC G1M 1B3
Tel. : +1 418 687-0628

Filtrum Construction Montreal
3500, 1st Street, Saint-Hubert, QC J3Y 8Y5
Tel. : + 1 450 676-8558

www.filtrum.ca

FILTRUM
CONSTRUCTION

Biogas Electricity Generating System-EBI

Berthierville-Canada

Client
EBI Energy

Contractor
Filtrum Construction

Capacity
10 megawatts

Value
3 000 000 $

Description

Filtrum Construction won two separate contracts for the mechanical/piping installation and the control/automation work at the EBI Energy landfill power plant located 75 km east of Montreal. The contract included the installation of six 1.6 mW generators at the site.

Challenge

Our team faced major challenges during construction as there were multiple crews from multiple EBI hired subcontractors working simultaneously in the plant. Communication between each subcontractor and the project management work by Filtrum were key to completing the project on time.

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FILTRUM
CONSTRUCTION

Upgrading an existing control system

Huntingdon, Qc - Canada

Client
Huntingdon

Capacity
Approximately 3 500 Tags

Value
400 000 $

Description

Originally built in 1976, the plant is equipped with lamellar settling technology with a pulsed sludge blanket followed by sand filtration. It provides the drinking water for the town of Huntingdon, as well as the towns of Godmanchester and Hinchinbrooke nearby.

Challenge

In early 2000, the control system—built using both pneumatic and programmable logical controllers—started showing signs of its age and broke down repeatedly, which entailed a noticeable increase in operating costs. The many operations that needed to be performed in manual mode in order for the water-treatment system to function properly required a good deal of attention from the plant's operations personnel. The plant's control system was evidently reaching the end of its useful life. The challenge was to upgrade with a modern control system featuring a large number of unknown parameters, but without losing any of the system's capacity during the overhaul.

Solution

Filtrum was awarded the contract to upgrade the plant's control system. What followed, over the course of a year, was that Filtrum installed a PLC with a SCADA system (supervisory control and data acquisition) in order to mimic the entire plant's control sequences, simultaneously replacing the treatment obsolete equipment sector by sector. The replacement of the control system was followed by a sequence-optimization phase.

Results

The upgrade and optimization work, once completed, substantially reduced the man-hours required for the town's water-treatment process to function flawlessly. What is more, the town's expenditure for process consumables dropped considerably once the treatment process was fully on line.

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FILTRUM
CONSTRUCTION

On-Site Hypochlorite Generation-City of Montreal

Montreal-Canada

Client
City of Montreal

Contractor
Consortium Filtrum-Siemens

Plant Capacity
1 136 000 m3/d

Value
13 000 000 $

Description

Filtrum Construction was awarded the contract by the City of Montreal. This project was a joint venture between Filtrum Construction and Siemens Water Technologies (now Evoqua) which involved the replacement of the plant's gas chlorination system with a state of the art on-site hypochlorite generation system. The project scope included the new generating system equipment, the chlorine dosing equipment for the city's treated water, as well as five (5) storage tanks of 80 cubic meters each to hold the 0.8% chlorine solution produced by the new on-site system.

Challenge

Complex tasks such as installation of many kilometres of PVC piping, construction of the huge hypochlorite tanks, and installation of the generators and all necessary ancillary chlorination equipment had to be closely timed and planned with the plant operations personnel to ensure potable water production would not be compromised during construction. The start-up and commissioning had to be performed without any production interruptions and the project was completed according to the tight schedule agreed upon with the client.

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FILTRUM
CONSTRUCTION

Pumping Station #4 — Ultramar Refinery

Saint-Romuald, Qc - Canada

Client
Ultramar

Contractor
Filtrum

Capacity
46,000 m³/day (8,500 USGPM)

Value
500 000 $

Description

Filtrum Construction was commissioned by Ultramar to conduct process engineering and plumbing work for fire protection pumping station #4 at the Ultramar refinery in Saint-Romuald, Quebec. Filtrum had to install four pumps with 800 hp diesel engines specially designed for fire protection systems. The commission also included supplying and installing all suction and discharge piping, as well as the fuel and exhaust system.

Challenge

With most of the equipment required for the project having already been purchased and shipped to the site, Filtrum prepared all the piping at its Quebec City shop so that it would be possible to finish the project within the tight schedule required by the client. A number of teams had to work in a building with fairly limited space. The various groups of tradespeople, the supply of materials and the work of our teams all had to be perfectly coordinated in order to successfully deliver the project on time.

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FILTRUM
CONSTRUCTION

Modernization and Revamping of Water Treatment Plant

Valleyfield, Qc - Canada

Client
City of Salaberry-de-Valleyfield

Capacity
89,000 m³/day

Value
13 600 000 $

Description

The goal of the contract is to revamp and modernize the La Seigneurie wastewater treatment plant in the city of Salaberry-de-Valleyfield. The work undertaken has made it possible to enhance the infrastructure's capacity, replace certain equipment that had reached the end of its useful life and construct a new UV disinfecting facility as well as a receiving station for transported septic tank sludge and wastewater. The plant's capacity will increase from 50 million litres to 89 million litres per day.

Challenge

The main challenge of this project is integrating new equipment into the existing facilities while keeping the plant operational. In addition to performing all the mechanical, electrical and process control work, Filtrum is the general contractor for the project and has to coordinate the architectural work, building mechanical and electrical work, structural work and civil engineering.

The Solution

Excellent communication with suppliers, subcontractors, consultants, operators and the client in combination with robust planning and creative thinking have made this project a success.

Outcome

The client is thoroughly satisfied with the work's progress.

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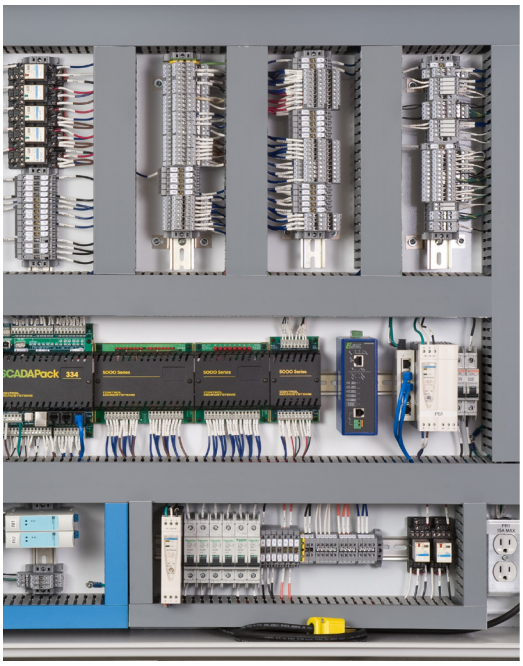
FILTRUM
CONSTRUCTION

Wireless data transmission system



Waskaganish, Qc- Canada

Client
Cree Nation of Waskaganish

Capacity
Five telemetry systems with SCADA control centre (supervisory control and data acquisition)

Value
250 000 $

Description

Waskaganish is a Cree community of over 2,000 people at the mouth of the Rupert River on the southeastern shore of James Bay in Northern Quebec, Canada. Formerly called Fort Rupert, the location is one of three original Hudson's Bay Company posts on James Bay.

Challenge

The drinking water treatment system and the wastewater pumping stations of Waskaganish village consist of five stations distributed over a vast territory. In order to optimize the management of operations, the Cree community decided to implement a telemetry system as of early 2012 and combine all of the station control points within a single control centre making use of SCADA technology. This centralized system will be located at the water treatment plant, where Filtrum recently installed the complete process. The project timetable was a major challenge, as the client only had a three-month window in which to have the entire job done, including design, installation, commissioning to allow interfacing of existing controls, and the integration of processes on a telemetry system.

Solution

Filtrum was awarded the contract to install a turnkey system in order to combine all of the drinking water treatment system's control points under a single SCADA system, as well as those controlling the wastewater pumping stations. The scheduling constraint was in fact an important factor in the choice of contractor for the project. For the contractor, the technical challenge of working in a remote region was an added complication. Under such conditions, Filtrum redoubled its efforts, leveraged its expertise and optimized its strategic partnerships to ensure the project was delivered on time.

Results

Once the SCADA telemetry system was fully commissioned, the frequency of controls and inspections required directly on site dropped significantly, as the new system now enables remote viewing of all plant systems, whether internal or external. The operations team can now focus on the smooth running and timely maintenance of the plant, its equipment and the entire network more effectively and efficiently.

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Process mechanics

Water treatment processes are no secret to our employees. The treatment and distribution of drinking water, as well as collection and sanitation of wastewater, leachate and other refuse are our specialty. We install complete systems for conventional filtration treatment, membrane filtration, distribution systems, raw water pumping, wastewater pumping stations and other related mechanical systems.

Piping

We can fabricate in our own workshop any piping system with the highest quality. We are experts in stainless steel, which is widely used in water treatment. We also assemble piping on independent units to minimize on-site work.

Electricity, automatization & instrumentation

We install, interconnect and control water treatment systems with unrivaled skill and productivity. We bring any instrumentation, automatization or process control project to term from maintenance to turnkey installation including commissioning of complex process management systems.

Our highly trained and experienced, multidisciplinary team allow us to work on product platforms from all major manufacturers on the market today.

Design and manufacture of control panels

In our assembly plant, we can design and assemble your control panels. Seeing the big picture of a project is one of our strengths at Filtrum Construction, where our multidisciplinary team contributes greatly to our experience. Thanks to this talent for analyzing and understanding your processes, we can deliver a product that meets your specifications, complies with CSA standards and perfectly integrates your application.

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