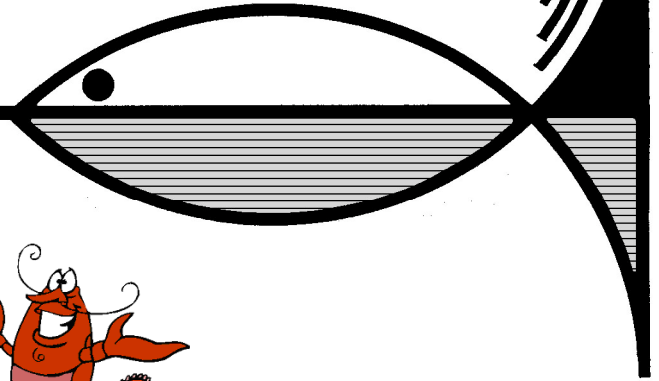


The Herring Choker

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NB PEI CHAPTER



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Date: Saturday, 22 June 2013

Time: 5:30 pm

Location: **Captain Dan's Bar & Grill**
Pointe-du-Chêne Wharf
Take Exit 37 from Rte 15 toward Shediac
Turn Left onto Main Street
Turn Right at lights onto Pointe-du-Chêne Road
Captain Dan's Bar & Grill is at the end of the road (2.3 km)

Menu: Seafood Chowder
Steamed Mussels
Caesar Salad
1 lb lobster **or** New York Striploin steak
Potato Salad
Coleslaw
NB Blueberry Cobbler
½ bottle of wine per person

Cost: \$30 per person
(Please make cheques payable to ASHRAE NB/PEI Chapter)
Cheques will be collected at the event

RSVP: Please reply to Dwight Scott [dwightgscott@gmail.com](mailto:dwrightgscott@gmail.com)
Indicate:

- Name of each person attending
- Each person's choice of **lobster** or **steak**

Cut Off Date: Monday, June 17th (please don't wait until the last minute!!)

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Summary of June 11th Meeting

More than 30 people turned out for a technical tour of the recently commissioned Energy Centre at the Georges L. Dumont Hospital in Moncton. This project received the 2013 Award for Recognition of Engineering Excellence in the Buildings category from the Association of Consulting Engineering Companies, New Brunswick Branch.

The new heating system includes three new 700 BHP steam boilers. The boilers are fired by natural gas, with No. 2 oil as a backup. Flue gases pass through economizers en route to the stack to preheat feed water. The new chilled water system consists of a 400 ton heat recovery chiller, with 500 and 1000 ton chillers to meet various seasonal loads. Three diesel-generator sets serve essential electrical loads in case of an emergency.

The Energy Centre is located at the extreme north end of the Campus to facilitate future clinical growth, and is connected via a 1300 linear foot tunnel to the main Hospital. The cross-section of the tunnel is 10 ft x 10 ft. Approximately midway along the 1300 ft tunnel is a node to provide access for a future clinic. Many participants on the tour walked through the tunnel to the former central plant adjacent to the main hospital.

Thanks to David McAllister and Frédérik Bernard from MCW Maricor for conducting the tour. Following the tour, a number of people adjourned to The Pumphouse Brew Pub for supper.



Dwight Scott presenting a token of appreciation to Fred Bernard, one of the tour guides from MCW



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Chantal Daigle Verrier, P.Eng., LEED AP, CMVP
Manager | Energy Practice | Moncton

100 Years History of Highfield Pumping Station in Moncton.



The population of Moncton was 14,000 in 1907. Water for the city was supplied by the Water Works Pump House located at Crow's Island on Hall's Creek, some 850' north east of the corner of Mountain Road and King Street. The Pump House measured 30' x 25'. Gravitation and Direct pressure were obtained from a Water Supply Lake about 5 miles north-east of the city, as well as from the Irishtown Road Reservoir of 250 Million Gallons capacity, about 3 miles north-east of the Pump House. In all Moncton had 98 hydrants with a pressure of 80 to 100 lobs.

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Moncton was undergoing a major growth period due to the new and expanded Intercolonial Railway shops and the announced arrival of the National Transcontinental Railway (Grand Trunk Pacific from Prince George, B.C.) with Moncton as the eastern terminus. Moncton had the fastest growth rate east of Montreal.

Small Pox hit the city in 1908. The construction of an Isolation Hospital in what was essentially a boom town greatly heightened the concern for good water.

In January of 1910, the City Engineer proposed introduction of meters to large consumers to curtail wastage and suggested construction of another reservoir and mains. Moncton is so situated that there are no lakes or large streams within reasonable distance from which an entirely gravity system can be obtained. The only alternative was to construct artificial impounding reservoirs on the smaller brooks and storing the water in the rainy season to tide over the dry season. What seemed best at that time was to locate pumping station in the vicinity of Intervale in line with High Street as from the maps it showed that the different watersheds converged at this point.

It was proposed to build No. 2 reservoir on Ogilvy Brook (capacity 248 Million Gallons) with 20" leading main to Pumping Station. In addition to this, a high level reservoir (capacity about 32 Million Gallons) could be constructed on Gorge Brook having a capacity of 32 Million Gallons at an elevation high enough to get gravity pressure to the hydrants of 60 to 70 psi. Thus the total capacity would be 500 Million Gallons, equal to a supply of 80 gals per capita for a population of 20,000 for 312 days. The estimated cost including the pumping station and a 20" main was \$213,000.00.

In October of 1910 the City Council approved these proposals and placed a deadline of Jan 1, 1912 for completion of the works. In February 1911 the City Council passed a resolution to submit a bill for the issue of debentures for \$ 230,000.00 to raise the funds required for the project. On May 5th of 1911 the City Council adopted a resolution to call for tenders to clear the site for the New Reservoir and a week later it was awarded to Fred & Irvine Lewis for \$170.00. On May 26th of 1911 City Council adopted a resolution to issue these debentures and that they be dated July 15 1911 for a term of 40 years at an interest rate of 4.5% per annum. The same council appointed John M Brown to superintend the excavation for the dam and a committee of two aldermen and Engineer Edington was established to obtain the necessary right of way for the pipe line. In July 1911 the plans and specifications were completed and tenders were called to close at noon July 27 1911. In Aug of 1911 J W McManus Company was awarded the contract to construct the new dam and reservoir for \$ 128,542.17, Stewart Trites was awarded the contract to haul pipes along the new pipe line @ \$ 1.00 per ton and C E Fish for excavating, laying pipe and refilling the trench for \$12,924.50. The following April however, C E Fish requested to be relieved of his contract. Tenders were recalled for the work to be completed by November 1912 and on April 17, 1912 C.E. Fish was again awarded the contract but for the amount of \$19,488.00

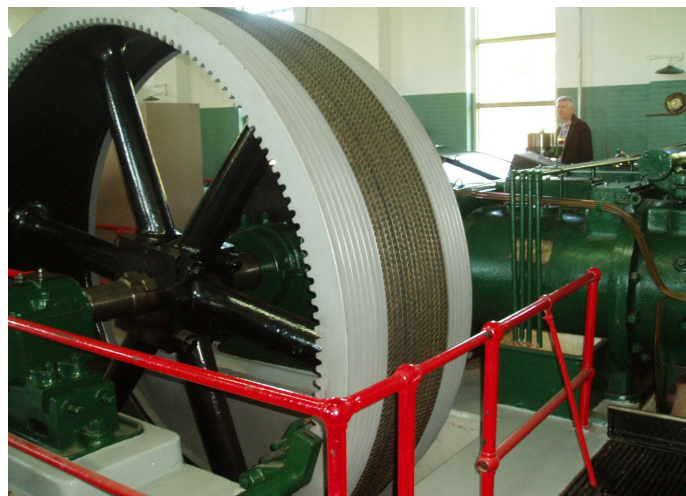
On August 5th 1912 the Council adopted to call for Tenders for the Pumping Station as per the plans prepared by the Engineer. On November 7th 1912 the Council adopted that the tender of George B Low for \$12,134.68 be accepted for building of the Pump House. It stipulated that the building is to be built under the personal supervision of the City Engineer who shall have the right to have any portion of the building proceeded with or suspended as he may direct. The contractor shall also give bonds to the amount of \$1,000.00 for the satisfactory completion of the contract, and the building was to be completed no later than May 15th, 1913.

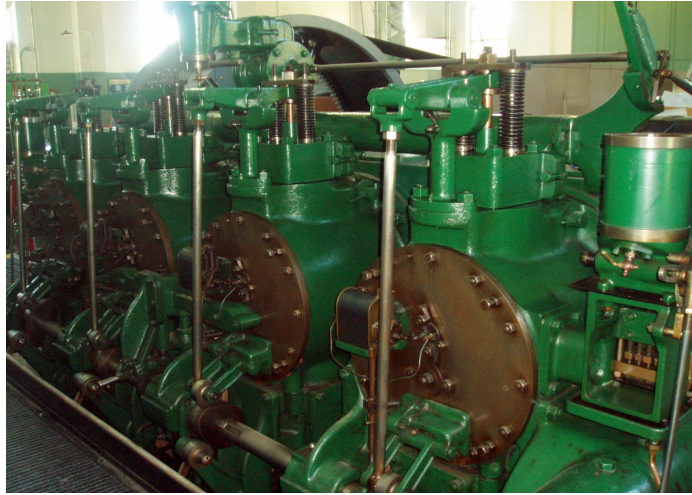
Moncton Mayor Robinson delivered the Water Department report for 1912 on January 10, 1913. He noted:

- The cost of pumping water has sharply increased in 1912 from \$6,105.46 in 1911 to \$9,683.55 in 1912.
- The extra cost of pumping is because the electric pumps were run day & night to service the customers
- This cost will be almost half when the New Pumping stations is commissioned as the new pumps will run on gas engines using natural gas for power.
- Even though the total cost of engineering for the New Pumping Station was \$19,000.00 they had so far spent only \$2,174.66 and the estimated balance costs were only \$2,000.00.
- No water system of this size was ever put in for such low engineering cost and this system will be one of the best in Canada.
- The capacity will be 750 Million gallons or enough to supply a city of 60,000 population.
- It was the city's intention to connect the old mains to the new so that all water from both the reservoirs will come through the new pumping station. They will do away with the present station and the pumps there will be placed in the new station as auxiliaries.

On December 6, 1913, the daily Times reported that the New Pumping Station is ready for action. The salient features are:

- It is 100' x 60' in size with Concrete Foundation and Brick Superstructure
- The plant in the new pumping station consists of a 450 H.P. primer gas engine and turbine pumps having a capacity of 5 million gallons per day. The station is large enough for 2 pump units.





- Besides the main building there are two smaller buildings. One of 10' x 10' for screens and one of 25' x 8' for the gas regulator. Both are of wood with concrete foundations.
- The plant is to be run by natural gas which can be produced on site in the gas producer room.

The cost of the new station is \$20,000.00 and the plant has been installed at a cost of \$22,000.00. At the discharge end of the pump, venturi meters have been installed to measure the usage.



- From the pumping station to the city two 18" force mains have been laid, one connection on St George Street at Weldon Street and the other connecting at the corner of St George street and Enterprise street.
- These mains were laid by contractors Docity LeBlanc and Amos Govang while the main from the reservoir to the station was laid by Contractor C E Fish of Newcastle.

The electric pumps in the old station were planned to be moved to the new station next year at which time the old mains will be connected to the new mains.

On May 10th, 1966 the New Turtle Creek Water Supply was completed and the High Field Street pumping Station role was shifted to an intermediate water booster pumping station for the north-west section of the City and the so called Humphrey-Sunny Brae areas. At the same time this grand old station also retained its capability to supply a sufficient quantity and pressure of water on a stand-by basis should the need arise. On occasion this has happened and the Highfield Pumping Station has reverted to its original role and has met the city's water needs.

In 1983, after 70 years of continuous operation, this facility was designated as an AWWA Landmark. This historic facility is still going strong and later this year Moncton will be celebrating its 100th anniversary. The original engines ran on the site-manufactured coal gas for several years before Natural Gas from Albert County became available. This was a dirty job that required a lot of manpower and hard labour to keep the pumps running 24/7. 100 years later these original Premier gas engine with its large flywheel and rope drive is still functional.

In 1952, a large Ruston Hornsby diesel engine was purchased as a backup for the electric pumps as natural gas service was not always reliable. This large unit was the backup unit for 50 years until it was replaced by a modern diesel driven pump in 2002.



Below is the view of the mains & valves at the lower level.



Today the pumping station is a mixture of old and new technology. Besides the old pumps, original pressure gauges and venture meters there is a Robb Steam Boiler from 1938.



This steam Boiler has been superseded by a modern oil-fired condensing boiler.

It also houses two modern electric pumps (500 & 600 HP) each with variable frequency drives, modern water quality monitoring equipment and Scada Control. Currently 3 water system operators work out of this historic facility which continues to be a vitally important component of Moncton's water infrastructure. Each day the facility pumps approximately four million gallons of water to service 50% of the city's residents and businesses.

Later this year the big doors at Highfield Street Pumping Station will be opened to the public and the media for all to see this grand old facility up close. Following the anniversary ceremony the old Premier gas engine will once again be fired up to show everyone how it was done 100 years ago.

Acknowledgements & Excerpts:

1. Ensor Nicholson P.Eng., Director of Water Systems, City of Moncton
2. Application Document for Canadian Water landmark Award done in 1983
3. Photographs taken by Dwight Scott & David Samuel on May 29, 2013





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NB/PEI ASHRAE Chapter Meeting Schedule 2012/2013

Social Event

2013 GOLF TOURNAMENT

Where: Moncton Golf & Country Club – Riverview, NB
Elk's Club – Moncton, NB

When: Thursday, August 1, 2013

Format: Team Scramble (4 people) One person on each team to be an ASHRAE Member.

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