

# Let's Celebrate 120th

Anniversary

Electric City





DECEW I GENERATING STATION



## A brief history of how and why Hamilton became the **Electric City**

1888 – Tesla patents the new system for producing & transmitting electricity

1989 – Westinghouse buys Tesla's patents

1889-1893 - War of Currents AC vs. DC

1893 – Columbus World Fair – Chicago – demonstrates superiority of AC

Decision – Niagara Falls will use AC system developed by Tesla

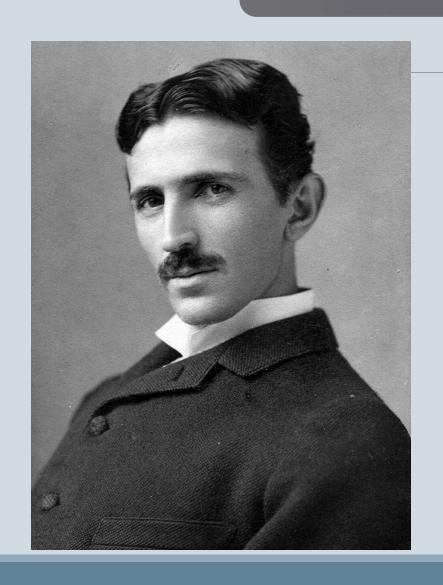
1894 – John Patterson & Spectator reporter visit Adams Power Plant Niagara Falls NY

1896 – Tesla consulted and approves plans of 5 Johns to send power to Hamilton

## A brief history of how and why Hamilton became the **Electric City**

- 1896 Cataract Power Company of Hamilton formed
- 1897 construction begins on Decew Power Generation Station
- 1897 Westinghouse building his plant in Hamilton
- 1898 August 25 "Power Turned On"
- 1898 November 12<sup>th</sup> official grand opening of Decew Power Generation Station

#### **IMPOSSIBLE WITHOUT NIKOLA TESLA**



May 16th, 1888: Tesla's Speech "A New System of Alternate-**Current Motors and Transformers**" paper was read before the American Institute of Electrical Engineers (now the IEEE) at Columbia University in New York.

ELECTRIC POWER.

A letter from Mr. Killey, which will be found in another column, will prove interesting. The facts there stated must speak for themselves. It is enough to say here that electrical engineers think it quite possible to carry power from a waterfall in Central India to Madras, a distance of 350 miles. and to make the venture commercially successful. The difficulty and expense of using electric-power at a distance from the source of supply increase with the distance. But with high voltages it is now found possible to cover distances wholly undreamed of a few years ago. Hamilton, as has been explained, has been placed at a disadvantage by the fact that the Mowat government has given a monopoly of the power at Niagara Falls to a foreign company, and that company will charge exorbitant prices to all Canadians who may desire to use the power. Still it is probable that if the city should agree to take say 5,000 or 6,000 horse-power the price at the Falls would not be so great as to make the use in this city prohibitory. The city authorities should manage this business. The city itself can use a great deal of the power for public purposes, such as street lighting and possibly for pumping water. As the city owns the streets, it should control all works which use the streets. It could also economically supply light to private users and power as well.

The city of Evansville, Indiana, some time ago, made inquiries respecting the cost of street lighting by electricity. The replies showed that in cities lighted by private companies the average cost of each arc lamp was \$114.59 per year. In cities owning and operating the plant it was \$57.88, or about one half as much. The probability is that if the city of Hamilton shall undertake to construct a modern plant and to operate it, the cost of public lighting will be reduced by forty per cent, while coniderable profits could be made by furnishing light to private consumers.

If the city will underfake to supply power to private users also, the net cost of the power needed for the elec-

ric light system will be greatly re-

ELECTRIC POWER FROM THE FALLS

From time to time the Buffalo papers tell us of the wonderful things which electric power transmitted from Niagara Falls will do for their city. And we think their wildest expectations will be realized. The Express now tells a Boston critic that the cost of power at the Falls, will be from \$6 to \$8 per horse-power; that the cost at Buffalo will not be more than two-thirds that of steam power; and that the Buffalo street railway company "has already made plans to replace its steam plant with the Falls current."

The people of Buffalo are able to procure power at the Falls for from \$6 to \$8 per horse-power per year. But the people of Hamilton are upable to buy it for double that sum. The Mowat government has sold a monopoly in the Canadian side of the Falls to a foreign company, which will neither use the power nor let anyone else use it. This concession was the most damaging blow struck at Canadian inter ests for many years, and particularly at those of Hamilton. When Mr. Patterson approaches the Niagara Falls Electric Power company, he cannot get power for \$6 or \$8 per year. Nor for double the sum. In fact, the price is to be made so high that no Canadian can afford to use it. The Mowat government has most shamefully betrayed the interests of the province generally, and of the country adjacent to Niagara in particular. The foreign monopolists pay a ridiculously low price for the concession in the first place. In the second place, they are not required to use the concession from which they shut others out; and in the third place. they are permitted to so regulate their prices by a sliding scale, that even if they shall complete their works on this side of the river, it is to be feared that no Canadian city can afford to buy the power.

Spectator April 1894

#### **Electric Power**

Mowat gov't gave rights to foreign company...

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Spectator april 30, 1894

Construction Company, By Means of

It may be that "the oldest inhabisteam power in the factories was sec and shops of Hamilton; to see all kinds

HAGAKA FALLS IN HAKNESS
HOW THE GREAT CATARACT'S POWER
IS BEING THILIZED.

Before giving an account to explain what the Nigara Falls Fower company is and why it was formed. It owes its existence in a great measure to a hydrallic engineer named Thomas Everhad been was one of the board of Which Fower Is To Be Transmitted to the way of beautifring the surroundings of What He Saw on Saturday, milton; to see all kinds and under its provisions was formed the broduced, the streets ed. food colocked, houses to be amount of \$10,000,000 "and to construct many and city, water struck maintain and operate tunnels.

Spectator April 30, 1894 Niagara Falls in Harness

#### How the great cataracts power is being utilized

"It may be "the oldest inhabitants" will live to see electricity substitute power in the factories and shops of Hamilton; to see all kinds of manufactures produced, the streets and houses lighted, food cooked, houses heated, street cars run and city water pumped by means of dover developed at Niagara Falls and transmitted here over wires."

"On Saturday afternoon Mr. Patterson went to the Falls to interview two or three of the New York Capitalist..."

CANADIAN

#### ELECTRICAL NEWS

AND

#### STEAM ENGINEERING JOURNAL.

Vol. VI.

**AUGUST, 1896** 

#### ELECTRICAL POWER TRANSMISSION TO HAMILTON.

THE Cataract Power Company has been incorporated at Hamilton, with a capital stock of \$99,000, for the purpose of transmitting electric power from DeCew Falls to Hamilton, a distance of 32 miles. The promoters of the company are Hon. J. M. Gibson, James Dixon, John Moodie, John William Sutherland, John Patterson, and Edmund Brown Patterson, all of Hamilton. DeCew Falls are situated about two miles from St. Catharines and receive a constant and unfailing supply of water from Lake Erie. The height of the fall is about 270 feet. The depth of water at the brow of the fall is about 5 inches, and the width about 18 feet. This comparatively small body of

water, operating upon water wheels from the height mentioned, is capable of generating 2,500 horse power. The only purpose served at present by this magnificent water power is the operation of a couple of small mills. The Cataract Power Company have acquired the sole ownership of the water privilege, and are understood to have gone very thoroughly into the practicability of the scheme for transmitting the power to Hamilton. No particulars are as yet obtainable regarding the system or methods to be adopted for transmission, but the details are said to have been carefully worked out and submitted to Nikola Tesla and other electrical experts, who have approved of them.



HON, J. M. GHISON, President Cataract Power Company, Hamilton.

The company have submitted to the Hamilton Street Railway Co., Hamilton and Dundas Railway Co., Hamilton, Grimsby and Beamsville Railway Co., Hamilton Electric Light and Power Co., and other large power users, a proposition to supply them with power at a cost very much below what they are paying under present conditions. The proposition is that the power shall be supplied under guarantee, so that the purchaser is asked to assume no risk whatever. If the company succeed in getting the acceptance of their proposition from the leading power users, the work of installing the necessary plant will be at once proceeded with. The total cost of carrying the enterprise to completion is estimated at nearly a quarter of a million dollars. If carried out this will be the longest electric power transmission line in the Dominion, and one of the longest in

The further development of so important an enterprise, and one which bears to some extent the character of an experiment, will be watched with much interest. The recent declaration of Nikola Tesla that he has solved the means of successfully transmitting electric power for commercial purposes to a distance of 500 miles, augurs well for the success of this and enterprises of like character in the future.

#### Electrical News - August 1896

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The

## The Hamilton Spectalor

HAMILTON, CANADA, FRIDAY, AUGUST 26, 1898.

DRIDG FOCAL STEMS

### POWER TURNED ON

Set in Motion at Decew's Fails
Yesterday Afternoon.

The Current Reaches Hamilton and Makes Things Lively at the Sub-Station.

Volts, Numbering 22,000, Are Converted to 2,400 Volts—The Start Was Most Successful.

Yesterday was an important day for the directors of the Cataract Power. company. It marked the near completion of the company's plans for supplying city business men with power for their works and factories. Out at Decew's falls-23 miles away-were gathered representatives of the company and Manager Leyden, and the big machinery was set in motion without a hitch. The water from the Welland canal was turned into the penstock, and 200 feet below the big turbines revolved and set the generators in motion to turn out electrical power and send it along the wires to Hamilton.

At the city end-in the sub-station on Victoria avenue north-yesterday afternoon were waiting a small party of interested citizens, among them John Patterson, J. Moodle and J. Moodle, jr. At 4 o'clock the power flowed into the two transformers and a 30 borse power motor, giving ample indication that the work so far was a success. From 4 to 10 o'clock the power continued, the visible evidence, besides the motor, being an immense star inside and a maple leaf outside the outlding, both in incandescent lamps, and an arc lamps.

The power being brought from the generating station is 22,000 volts, the highest potential known in Canada. By means of the two transformers this is reduced to 2,400 volts for city use. When all the connections are complete the power will be carried from the transformers along ducts in the ficor of the station, through which air is blown by a fan. From there it will be carried to the wices, and into the premises of those who have purchased power. The company's biggest customer is the Hamilton Electric Light and Power company, and the Cataract managers will get their lines into the works as soon as possible. They hope to have everything in working order within a few weeks.

The power at the Victoria avenue station will be turned on again this afternoon.

It is intended to have a formal opening of the works as soon as things have been fixed up in ship-shape order

LAKESONTARIO

VOL. VIII.

#### OF HAMILTON.

Description of an Important Canadian Electrical Enterprise,-

chronicle the formal opening of the electric power plant of unobstructed water-way. the Cataract Power Company of Hamilton, Limited, for 1 Third, the securing of land along the private water-

of electrical energy from a point on the Niagara escarpment, near DeCew Falls, to Hamilton, a distance of 35 miles, the conception and carrying out of which must almonument of business pluck and enterprise on the part

of those interested in and forming the Cataract Power Company. Over three years ago, when the transmission of energy by electricity over long mercial purposes

over 200 feet, obtainable at DeCew Falls, where the waters site for the power house. of the Beaver Dam creek tumble over the Niagara escarp- The hydraulic development, as it was desired by the

After the formation of the company the ground was were specially designed for this particular plant. bandon the original idea of utilizing the waters and mission of the same from the power house to the City of

THE CATARACT POWER COMPANY water-ways of the Beaver Dams creek and the DeCew Falls, and by changing the plans some very material advantages were gained:

First, the securing of a supply of water which would Demonstration of the Practicability of Long Distance Power be constant, through a feeder from the Lake Erie level of the Welland Canal at Allenburg.

SATURDAY, Notember 12th, will go down, in the elec- Second, the construction of a canal, 41/4 miles long,

the company can conserve its water at a period of non use or light load for use at the time of heavy load. Fourth, by going

three-quarters of mile east of DeCew Falls along the Niagara escarpment, an additional fall of 70 feet was obtained, which was a very valuable acquisition. At this point there were also ex-

advantages, both at the top of the

ceptional natural

stage, the possibility of utilizing the magnificent fall of it for the discharge of the tail water, as well as a splendid

ment, for the generation of electrical energy to be trans- Cataract Power Company, presented obstacles which, mitted to the city of Hamilton, 35 miles distant, sug- owing to the large units and to the high head, made it gested itself to Mr. John Patterson, of that city. After exceptionally difficult to secure a builder of water-wheels merous surveys and examining into the physical leasi- who would give what the hydraulic engineer's specificability of the scheme, he associated with himself the Hon. tions called for. After a long delay and much negotia-J. M. Gibson, John Moodie, sr., James Dixon and J. tion the Stilwell-Bierce and Smith-Vaile Company, of W. Sutherland, all well-known citizens of Hamilton. Dayton, Ohio, agreed to build special horizontal tur-Together they procured a charter and formed the bines of about 2000 horse power each, to work under a Cataract Power Company of Hamilton, Limited, for the head of 265 feet, and to operate at a speed of 400 revopurpose of the development of this power and the trans- lutions per minute. This required, also, special valve and valve gear and controlling devices, all of which

again gone over carefully, and it was found advisable to The generation of the electric power and the trans-

#### Canadian Electrical News

and Steam Engineering Journal December 1898

- □"Saturday **November 12<sup>th</sup>, will go down in the electrical** annals of Canada, a red letter day, as it will chronical the formal opening of the electrical plant of the Cataract Power Company of Hamilton... DeCew Falls, to Hamilton, a distance of 35 miles, the completion and carrying out of which must always stand as a monument of business pluck and enterprise on the part of those interested in and forming the Cataract Power Company."
- ☐ The 5 Johns overcame, at that time what was a seemingly insurmountable obstacle to transmit energy over such a distance.
- ☐ At that time, the highest pressure used was 10,000 volts
- ☐ Cataract used 22,000 volts.

### Hamilton – Leader in Innovation

Late 1800's – Early 1900's the city was a leader in Innovation

Businesses established and expanded in Hamilton, in part due to the cheapest power anywhere

New manufacturing processes were developed and implemented that propelled Hamilton into a major manufacturing centre.

### Nikola Tesla Educational - NTEC

- October 2013 –not knowing history wanted to link Nikola Tesla to Hamilton
- Surprised by little known fact of Hamilton history
- September 4<sup>th</sup>, 2014 NTEC appeared before GIC
- October 2015 NTEC present to Planning Committee
  - Council Approves Nikola Tesla Blvd subject to funding to cover signage costs
- April 2016, Funding in place
- July 10<sup>th</sup>, 2016 Tesla 160th birthday Nikola Tesla Blvd officially renamed.



### NTEC - Delivered

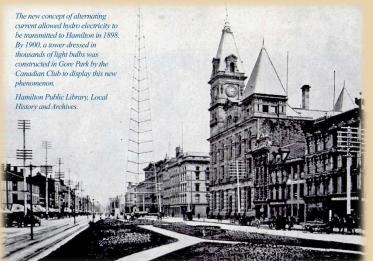
#### **Funding for Nikola Tesla Blvd**

#### Awards to students

- 1. 54 Nikola Tesla Awards to Grade 8 Students
- 2. 47 BASEF Nikola Tesla Awards
- 3. Platinum Sponsor at BASEF 2017
- 4. \$10,000.00 Nikola Tesla Scholarship awarded at McMaster University (only available to local students) funding for 5 years in place

Presented to over 2,000 students; "Hamilton the Electric City, Nikola Tesla & 5 Johns."

#### HAMILTON: THE ELECTRIC CITY



From the beginning of the 19th century, settlers were attracted to this region by the power of water cascading over the Niagara Escarpment. But it was not until 1896 that five Hamilton businessmen known as "The Five Johns" (John Dickenson, John Gibson, John Moodie Sr., John Patterson and John Sutherland), had the foresight and courage to invest in the new concept of hydro-electric generation and transmission. Backed by the economic strength of the Bank of Hamilton and technical advice from the Royal Electric Company, they formed the Cataract Power Company. With water drawn from the Welland Canal, inexpensive hydro-electric power was generated at DeCew Falls and transmitted 27 miles (43 kilometres), an unheard of distance, to a power sub-station on Victoria Avenue. Thus, Hamilton became the foremost electrified city in Canada and achieved world leadership in electrical power development.





www.archives.org



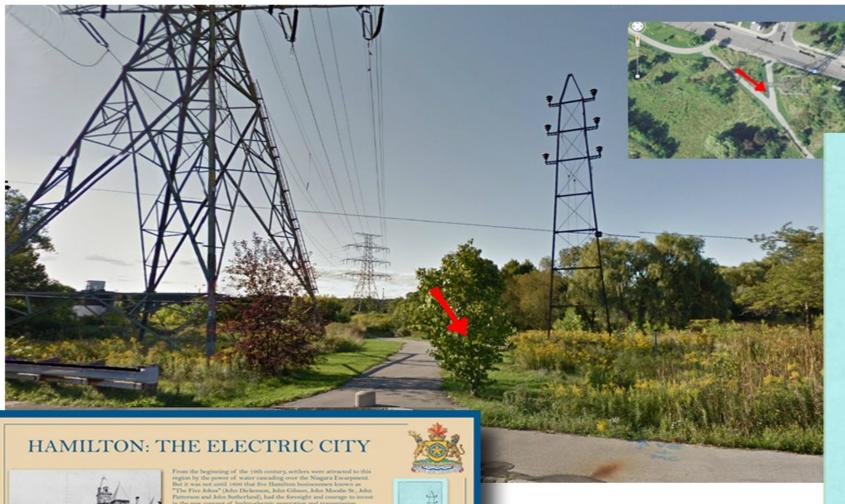
Postard ca. 1907 showing artist's conception of proposed Hamilton Terminal Station. The glass-covered bay area to the left of the building was never built. www.hamiltonpostcards.com The Cataract Power Company evolved into the Dominion Power and Transmission Company in 1907 with head offices at the Hamilton Terminal Building (seen at left), which became the hub of one of the country's most extensive interurban electric railway systems offering service to Brantford, Dundas, Oakville and Grimsby. The horse-drawn Hamilton Street Railway was one of the first to adopt electricity.

A port city like Hamilton with major railways, combined with abundant electrical power, attracted many new manufacturers such as Westinghouse, Otis Elevator and numerous cotton/clothing companies. Hamilton was dubbed the "Manchester of Canada". True to the vision of its electrical entrepreneurs, the city's population and economy expanded dramatically. As a symbol of that growth and prestige, a 100 foot (30.4 metre) lighted tower was constructed in Gore Park (1900 - 1923), inspired by the Eiffel Tower of the 1889 Paris World Fair.

Hamilton Historical Board City of Hamilton 2013

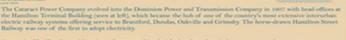








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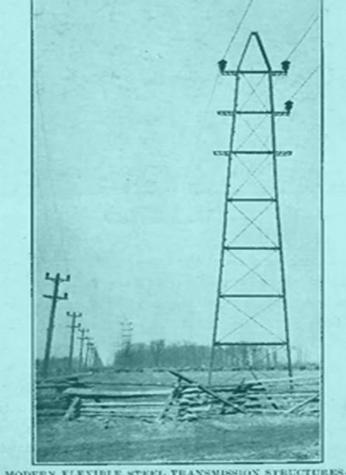
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Hamilton Historical Board City of Hamilton 2013



King's Forest Greenhill & Malta



MODERN PLEXIBLE STEEL TRANSMISSION STRUCTURES-ON PRIVATE RIGHT OF WAY FROM DECEW TO HAMILTON

## NTEC Requests of City re: 120th Anniversary of Electric City

- 1. Request for the City of Hamilton to formally recognized 2018 as the 120<sup>th</sup> Anniversary of Electric City
- 2. Request City of Hamilton to actively promote and participate in event celebrations
- 3. Waive rental fees for events held at City Hall and at Hamilton Steam & Technology Museum.
- 4. Hold press conference to promote the 120<sup>th</sup> Anniversary

## NTEC Plans for 120th Anniversary of Electric City

#### **Events planned to date:**

- 1. Official launch of 120<sup>th</sup> Anniversary at City Hall (March 2018)
- 2. Tesla Electric City Festival
- 3. Tesla Electric City Gala
- 4. Decew I Power Generation Station open house
- 5. NTEC will invite Burlington Teen Tour Band to enhance Decew open house

Tesla Electric City Festival at Hamilton Steam & Technology Museum



### Tesla Electric City Gala October 7, 2018





## Open to the Public



October 13, 2018



**DECEW I GENERATING STATION** 

#### Hamilton – A Call to Action

- ➤ Residence discover your own family history How and why are you here in Hamilton?
- ➤ Corporate world –Does your company have a direct link to this period?
  - ➤ Bank of Hamilton => CIBC
  - ➤ Cataract Power Company => Hamilton Hydro => Alectra
    - ➤ Radial =>HSR
    - ➤ Dominion Foundry & Steel => Arcelor Metal Dofasco
    - ➤ Steel Company of Canada => Stelco (again)

## A Call to Action – WE all have a roll to play and participate

- > Residence discover Hamilton History & your own
- ➤ Corporate Sponsor events & Donate to Public Art
- ➤ School Boards Teach our students OUR history so they can be inspired
- ➤ Media Report on OUR history and the celebrations
- ➤ Mayor should not have to answer Question Why Nikola Tesla BLVD?
- ➤ Hamilton This is yours to discover & be proud.

### NTEC Fundraising for Approved Hamilton Public Art Project

- ➤ NTEC officially launching fundraising campaign to fund share of the Public Art Project titled:
  - > "Hamilton the Electric City, Nikola Tesla & the 5 Johns"
- ➤ All proceeds and funds raised at events, will be dedicated to fund the Public Art Project
- ➤ NTEC is a registered Charity. All Donation received are eligible for Income Tax Credit that could exceed 40% of the donation.
- ➤ Donors are reminded that the City will match donation to \$100,000.00

#### NAME THE SCHOOL





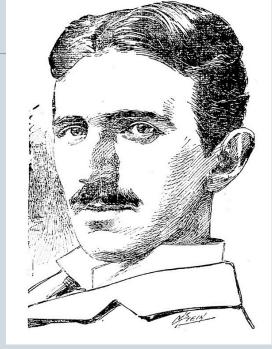
The New North High School

Needs a name that will inspire and educate...

Nikola Tesla Secondary School

## Give Tesla ONE MINUTE of your time.

Petition <a href="https://goo.gl/SbQZkf">https://goo.gl/SbQZkf</a>



HWDSB survey. <a href="https://goo.gl/NQBJSz">https://goo.gl/NQBJSz</a>

### Hamilton 1st in Innovation

Hamilton can make the claim based on the history

Hamilton home to world class University & Innovation Park

Innovation will attract both research funds and businesses.