CANADIAN INDUSTRIAL HERITAGE CENTRE

CANADIAN INDUSTRIAL HERITAGE CENTRE Newsletter

October 2024

This newsletter is published by CIHC, an organization dedicated to preserving Canada's Industrial history.

About 1900, Brantford was Canada's third largest industrial producer of exports to the world. Its industrial history mirrors the evolution of industry across Canada.

Our Address is Canadian Industrial Heritage Centre, P.O. Box 23055, Brantford Ontario, Canada N3T 6K4

See our website:
www.canadianindustrialheritage.com

Facebook:
https://www.facebook.com/CanadianIndustrialhistory

We are responsible for the TICCIH Canada website at www.ticcihcanada.org

Contact:
Please send submissions or inquiries to:
info@canadianindustrialheritage.com

Contents of this issue:

Learning from Our Past Building a Strong Future

President's Report

Members and Supporters of the CIHC,

As we enter fall, I'm pleased to share highlights of our recent successes and updates from the **Canadian Industrial Heritage Centre**. This season has been marked by incredible achievements and ongoing community engagement, and I am deeply grateful for the hard work of our directors, volunteers, and community partners.

The *Memories of Brantford's Armenian Community* project which took place on Sept. 28-29, was a huge success.

The exhibit, *Forget Me Not*, which I curated, will remain on display at the **Brant Museum and Archives** until September 20, 2025. You can read the full report in this newsletter, highlighting how our multifaceted event has brought the Armenian community's history and heritage to the forefront. This project enriches our ongoing efforts to preserve Brantford's diverse immigration stories, and I extend my sincere thanks to everyone who contributed to making this a profound success. In the coming months, these Armenian stories will also be added to our *Immigrant Memories of Brantford* website, further expanding our digital archive and preserving these invaluable narratives for future generations.

We're delighted to introduce two exceptional students who have joined our team. **Aliyah Ishmail**, a fourth-year *User Experience Design* student, has been actively developing our social media campaign and assisting with the website upgrade, bringing fresh insights to our digital outreach. Additionally, **Emma Kennedy**, a fourth-year History major and **Copp Scholarship** recipient from **Laurier Brantford**, will concentrate on cataloging and digitizing our collection. Her work will lead to a comprehensive database that enhances both accessibility and preservation. Their contributions bring valuable energy and expertise to our projects, strengthening our commitment to preserving and sharing our heritage.

Our Ontario Trillium Foundation-funded *Pop-Up Exhibit* continues to tour. Currently on display at the **Paris Museum**, it will move to **Myrtleville House Museum** in November and remain until February. From February to May, it will be hosted at the **Waterford Heritage and Agricultural Museum**. As part

of this ongoing series, our team is developing two new exhibits that focus on the region's *Textile* and *Communications* industries. These will be unveiled over the coming year, thanks to the unwavering support of our partner organizations.

The necessary repair work on 66 Mohawk has faced delays due to contractor setbacks. The City of Brantford is actively working with the contractor to complete the essential repairs to the Portico and the Timekeepers Office, and we look forward to sharing more progress soon.

We are thrilled about an upcoming collaborative exhibit titled *Swords and Ploughshares*, curated by Rob Adlam, which will open at the **Waterford Heritage and Agricultural Museum** on November 3 from 2:00 to 4:00 p.m. This exhibit celebrates the **Cockshutt Plow Company** and the Cockshutt family's significant contributions during three major world conflicts. I encourage everyone to join us at the opening gala to explore this meaningful exhibit.

Thank you all for your steadfast support and commitment to CIHC's mission. Your dedication enables us to continue preserving and sharing our community's rich industrial heritage.

Warm regards,

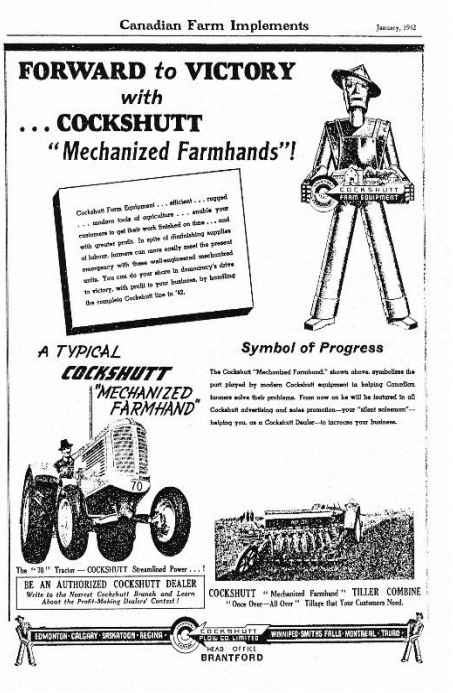
Christina Han

President, **Canadian Industrial Heritage Centre**

SWORDS AND PLOWSHARES REVISITED

OPENING GALA NOVEMBER 3RD

Exhibit Runs From November 2024 to February 2025



YOU ARE INVITED!

To An Opening Gala

Sunday, November 3, 2024

2-4 p.m.

at the Waterford Heritage & Agricultural Museum,

159 Nichol St.,Waterford.

www.Norfolk.Heritage.ca

PLEASE COME !

Meet your Directors.

DID YOU KNOW The difference between cement, concrete and mortar, and their history?

People are often confused by the terminology of common building materials – **cement, concrete,** and **mortar.** They may also be unaware of the magnificent projects created by talented engineers and architects in centuries past who used ingenious methods and materials to create masterpieces still standing today such as the **Pantheon** and the **Pont-Du-Gard Aqueduct**.

But first --what is Cement? **Cement** has been around a lot longer than the building material we recognize as concrete. It is a fine powder that hardens when you add water. Its main ingredient is lime.

To make **concrete**, cement is mixed with a mixture of sand and various materials called **aggregate** usually made from different types of sand and gravel. The mixture bonds together when water is added. **Aggregates** can include sand, crushed stone, gravel, slag, ashes, burned shale, and burned clay. Fine aggregate (small aggregate particulates) is used in making concrete slabs and smooth surfaces. Coarse aggregate is used for massive structures.

Concrete has been in use by humans up to 12,000 years ago, with the earliest archaeological discovery in modern-day Turkey of a whitewashed floor made from burned limestone and clay. In 6500 BCE when the Nabatea of what we know now as Syria and Jordan used an early type of concrete to build structures that survive to this day. The Assyrians and Babylonians used clay as the bonding substance of cement. The Egyptians used lime and gypsum cement**.**

Mortar is a mixture of cement, lime and sand, softer than cement, less durable and used to bond together bricks and stone.

Now that we understand the terminology, let us look at some examples:

The magnificent **Pantheon**, built as a temple dedicated to all the gods by the Emperor Hadrian, has been described as the most impressive building that the Romans ever built, and perhaps the most influential building in the history of architecture.

This huge monument is a wonder of ingenious engineering that is still standing after over 1800 years! The architects and engineers who designed this awesome masterpiece chose the building materials and designed it to make it everlasting.

What were their secrets? One of their secrets was their significantly advanced **concrete** technology.

The Romans used **volcanic ash** to create a durable mix for structures like the Pantheon, notably advancing the use of hydraulic types of cement—early forms of cement that set and hardened through a reaction with water. Volcanic ash mined near what is now the city of Pozzuoli, Italy, was particularly rich in essential aluminosilicate minerals, that reacts with lime in water to form the classic pozzolana cement of the Roman era.

One of their architectural challenges was to create a huge unsupported dome in the 142 foot rotunda. A series of arches were set on top of each other, with concrete rings around the base. It would have been too heavy with normal cement, but the **lighter** volcanic ash formula made it feasible. The 27 foot-wide centre hole reduced the enormous weight and at the same time allowed light into the temple.

Another lasting wonder created by Roman engineers was the **Pont-Du-Gard Aqueduct..** The builders took care to ensure that the interior of the water conduit was as smooth as possible so that the flow of water would not be obstructed. The walls of the conduit were constructed from dressed limestone rock, so carefully cut it did not require mortar, and the floor was constructed using their **waterproof** volcanic ash concrete. Both were covered with a stucco (a construction material made of aggregates, a binder, and water) incorporating minute shards of pottery and tile. It was painted with olive oil and covered with *maltha*, a mixture of slaked lime, pork grease and the viscous juice of unripe figs. This produced a surface that was both smooth and durable.

Hydraulic lime was first developed by John Smeaton in 1756 when he was called in to erect the Eddystone Lighthouse off the coast of Plymouth, Devon, England. At least 13 types of cement have been developed each for its unique purpose. **Portland cement,** the most common type of cement is in general use around the world as a basic ingredient of concrete, mortar, stucco, and non-speciality grout. It was developed in England in the mid 19th century, and usually originates from limestone. In 2018, Canadian firms produced the enormous number of nearly 13.6 million metric tonnes of Portland cement.

In the late 1900s the **Ontario Portland Cement Company** was formed in Brantford, with its operational site at Blue Lake, where marl was extracted from the bed of the kettle lake, mixed with clay, and dried. The company lasted about 20 years when competitive technology made the use of marl obsolete.

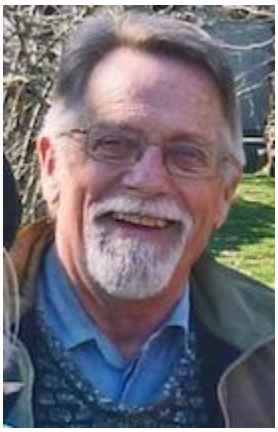
Concrete took a historic step forward with the inclusion of embedded metal (usually steel) to form what's now called **reinforced concrete** or **ferroconcrete.** Reinforced concrete was invented in 1849 by Joseph Monier, who received a patent in 1867. Monier was a Parisian gardener who made garden pots and tubs of concrete reinforced with an iron mesh. Monier exhibited his invention at the Paris Exposition of 1867 Reinforced concrete combines the tensile or bendable strength of metal and the compressional strength of concrete to withstand heavy loads, needed to construct railway ties, pipes, floors and skyscrapers. Today a **skyscraper in Dubai, United Arab Emirates** is the world's tallest **structure.** With a total height of 829.8 m (2,722 ft, or just over half a mile) and a roof height (excluding antenna, but including a 242.6 m spire) of 828 m (2,717 ft). The building was

opened in 2010.Uses of reinforced concrete also include concrete-reinforced bridges and massive structures such as Hoover and Grand Coulee Dams.

For many years, ready mixers were used on construction sites, and are still used for small jobs. Since then, ready-mix trucks have been the standard of delivering concrete to most construction sites. With the advent of green technology, home foundations are now created with cement blocks reinforced and filled with foam insulation.

Today there are momentous changes in technology yet we are still amazed by some of the architectural and engineering wonders of the past using concrete.After looking at some of the cookie-cutter buildings we have today, I feel that some builders have a lot to learn!
For more information look at YouTube The history of concrete

MEET YOUR DIRECTORS: Bill Darfler



Hello! My name is Bill Darfler and I have been a Board member of the CIHC, on and off, for most of its twenty plus years of activity. I have also sat on Brantford's Heritage Committee as a co-chair for many years, starting almost fifteen years ago.

I moved to Brantford in 1968 and bought a cottage on Albion Street in 1974. It turned out to be one of the oldest homes in the City and in researching its story I became a local historian. After delivering the mail for thirty years, I retired and became the "principal researcher" for a video production company that made products for TVO. We made County histories, a three-hour video called The Land Between, another three-hour story of the War of 1812, and many other projects including a series of videos on Canada's Biosphere Reserves.

I was involved with the formation of the Green Party of Ontario and helped organize the Grand River Watershed Congress that provided community input to the writing of the Management Plan for the Designation of the Grand as a Heritage River.

I was awarded the Lieutenant Governor's Ontario Heritage Award in 2014 and was also awarded a grant from the Canadian First World War Internment Recognition Foundation to study the story of the hundred Turkish factory workers who were arrested in Brantford at the outbreak of WWI and sent to the internment camp in Kapuskasing.

For the last five years I have been active in the Memories Project, a collaborative project involving the Brant Theatre Workshops, Laurier Brantford, the CIHC and the Brant Museum and Archives, along with local historians. We are telling the stories of Brantford's immigrant communities. At the time of the Census of 1910, Brantford was the number three manufacturing centre and had the highest proportion of "foreign-born" of any city in Canada.

I still live in the Old North Ward with my wife and pets. My son now lives in the Terrace Hill home my wife grew up in and my daughter lives and works in Ottawa.

THE SITE OF BRANTFORD'S FIRST INDUSTRY

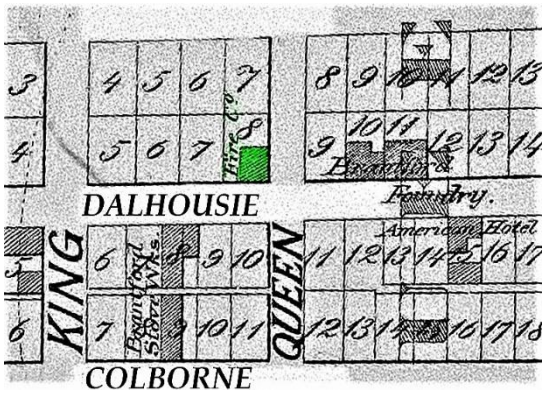
180 Years of Invention and Transition 1844 – 2024 by Rob Adlam

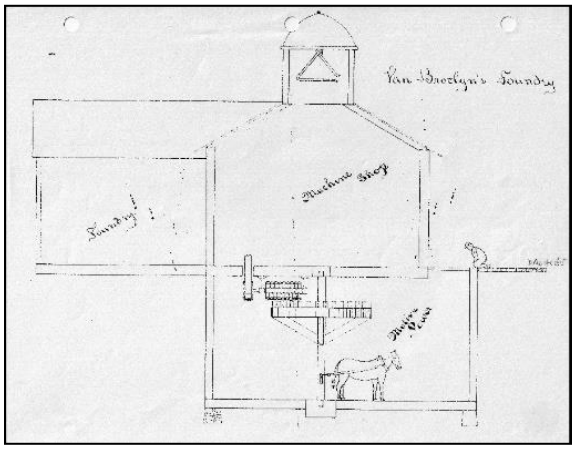
The site of Brantford's City Hall has always been closely tied to both industry and public service.

On June 24, 2024 the Canadian Industrial Heritage Centre (CIHC) gathered at Brantford City Hall with Mayor Kevin Davis to formally acknowledge the 180th Anniversary of the founding of Brantford's first industry, following the arrival of Philip C. Van Brocklin. The CIHC has placed on public display at City Hall a set of fireplace andirons made in Van Brocklin's foundry circa 1845.

Outlined on each casting: **P.C. VAN BROCKLIN BRANTFORD C.W.** (Canada West). These andirons were used in a fireplace in the Waterous family home for over a century and are the oldest known pieces dating to the original Van Brocklin foundry.

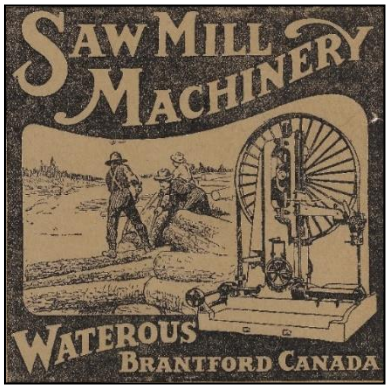
While Brantford was still a village, the site was the location of a foundry built by Philip C. Van Brocklin in 1844. Van Brocklin had initially come to Canada from the United States in the early 1830's to practice his trade as a moulder while working at the Long Point Furnace in Normandale, Ontario. The initial products of his Brantford foundry were utilitarian in nature and were targeted to serve the needs of the pioneering community; namely, plows, stoves, and fireplace accessories. This operation was the first foundry to be established in Brantford and is also recognized as Brantford's first industry. The foundry was located at Dalhousie and Queen Streets, as shown in the 1875 map of Brant County.





The original power plant for the foundry was a rather primitive operation that involved the use of a horse, housed in the basement and hitched to a sweep pole attached to a main vertical shaft. As the horse plodded around the in a large circular pattern, the shaft rotated and turned a series of gears and pulleys to supply power for machinery. Pictured right, is a sketch of the original foundry building showing the horse sweep, dating to 1845. Of note is the large triangle mounted in the building's tower. This was used to signal workers for the beginning and end of the workday. This triangle is housed as part of the collection of the Brant Historical Society.

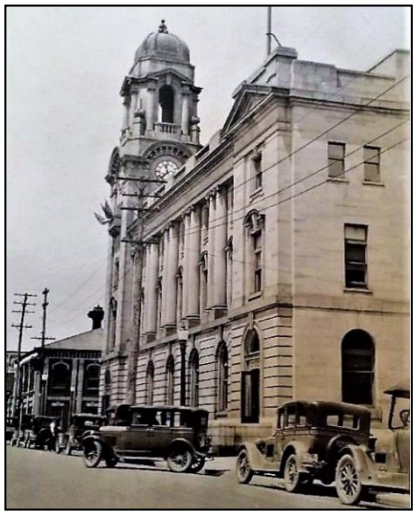
After a change in the initial partnership with Arunah Huntington, who would leave and pursue other business interests, and later a second partner F.P. Goold, Van Brocklin was joined by Charles H. Waterous in 1848. Within two years of Waterous' arrival, he began to change the product line from basic agricultural tools to threshers, grist mills, steam engines, boilers and sawmills.



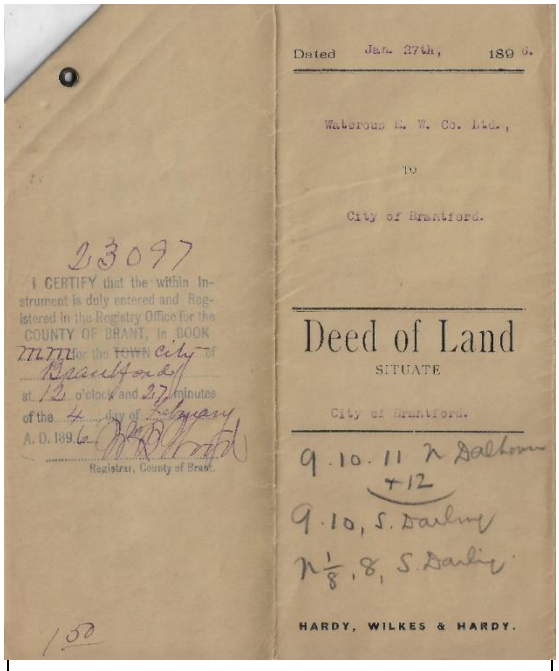
The re-organized business profited and grew greatly, and by 1854 Waterous bought out Van Brocklin. Waterous was a gifted engineer whose skill and commitment to produce quality machines would have Waterous products, and the Brantford name they bore, being exported around the globe. By 1874 the business would be incorporated as the Waterous Engine Works, with Ignatius Cockshutt being named president.

The constant threat of fire was a scourge to both homes and businesses. Despite the heroic efforts of volunteer fire brigades, the losses continued to be great. Seeing the need for superior fire fighting equipment that would perform more effectively than bucket brigades and hand pumps, C.H. Waterous designed and built a horse drawn steam fire engines in the early 1870's. A stream of water could now be sent higher and further than before possible with the old equipment and the potential for saving buildings was greatly increased.

In 1886 Waterous opened a factory in St. Paul, Minnesota to manufacture their fire fighting equipment for the US market. This company is still in existence today.



A fine example of a steam fire engine is displayed at the Brantford No. 2 Fire Hall on Fairview Drive. While the equipment was manufactured by the Ronald Co., the boiler was made at the Waterous Engine Works. At the 1906 Dominion Exhibition, held in Halifax, the Waterous Engine Works was awarded the Gold Medal for their 600-gallon Fire Engine and Gasoline Engine. Due to ever-expanding sales and product development, the original factory proved to be too small for the business to continue to prosper. The company chose to build a new factory on South Market St. in 1895, and the City of Brantford purchased the land and original factory from Waterous for $40,000. After sitting mostly empty for the number of years, the city then sold the property to the Canadian government and a Federal Building and ;+ Post Office was constructed in 1913.In 2016 the City of Brantford purchased the Dalhousie St. property back from the Canadian government and the building has been renovated as the new City Hall.


Dated Jan. 27th, 189 6.

Waterous E. W. Co. Ltd.,

to

City of Brantford.

23097

I CERTIFY that the within Instrument is duly entered and Registered in the Registry Office for the COUNTY OF BRANT, in BOOK ... for the TOWN city of Brantford at 12 o'clock and 27 minutes of the 4 day of February A. D. 189 6

Registrar, County of Brant.

Deed of Land

SITUATE

City of Brantford.

9.10.11 N Dalhousie +12

9.10, S. Darling

N 1/8, 8, S. Darling

1.50

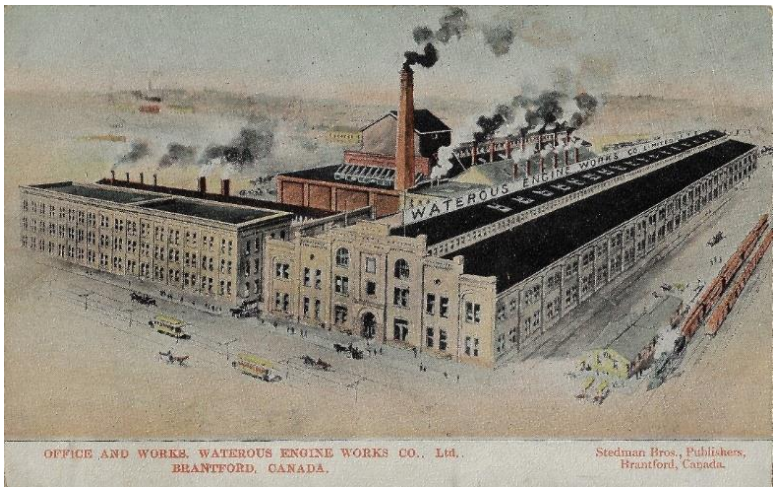
HARDY, WILKES & HARDY.

The original 1896 deed recording the sale of the Dalhousie St. property to the City of Brantford for $40,000.

The history of the site has almost come full circle. There is a strong public service connection to various owners and Waterous family members.

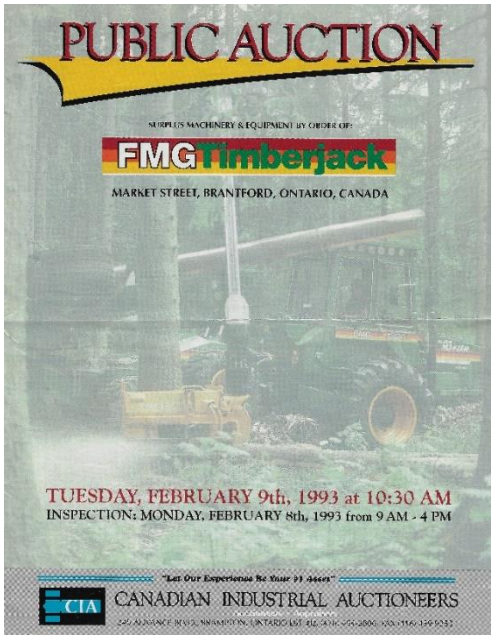
The following all served as mayors of Brantford:

- P.C. Van Brocklin, in 1850
- Arunah Huntington, in 1852
- C.H. Waterous Jr., from 1905-1906
- Reginald J. Waterous, from 1938-1940



With the decline in demand for steam engines, the company decided to change its name to Waterous Ltd. in 1926 to better reflect the range of products they were manufacturing by that time. In 1944 Waterous marked their centennial with a huge celebration for employees and their families. Waterous Ltd. was one of the first Canadian companies to reach the century mark of continuous operations.

In April 1947 Waterous Ltd. was sold to a group of Toronto businesspeople and the company was no longer controlled by the Waterous family. By 1953 the company was again sold to the Koehring Company of Cleveland, Ohio and the name of the Brantford operation was changed to Koehring Waterous Ltd. With this new ownership, a major focus of the company would be forestry and log handling equipment. Due to continuing changes in the industry the company was again sold to Timberjack Equipment of Woodstock, Ontario in 1988. Production was relocated to Timberjack's Woodstock plant in 1991. By October 1992, the Brantford plant was closed, and all factory machinery was sold at auction in February 1993. The following year all buildings on the site were demolished.



While this 180th anniversary is indeed an occasion to look back to where the company came from, and on those individuals whose achievements we honour, we also look forward with a sense of gratitude to the legacy born of this little foundry that continues to touch lives today. Consider the following:

Waterous Company: The branch of the Waterous Engine Works established in 1886 in St. Paul Minnesota continues in business today as a major manufacturer of fire fighting and industrial equipment.
https://www.waterousco.com/waterous/history/

Tigercat International Inc.: A successful forestry handling equipment company founded by former Koehring Waterous managers, engineers, and skilled tradespeople.https://www.tigercat.com/about-sc/

Waterous Holden Amey Hitchon LLP: The Brantford law firm founded by Reginald Waterous in 1921 that still serves the region today. https://waterousholden.com/our-history/

These two industries and law firm stand in mute testimony to the continuing legacy of their shared heritage, after 180 years and beyond to whatever comes next.

POP-UP DISPLAYS IN COMPLETION STAGES

CIHC's **Research, Collection and Exhibits Committee** is in the last stages of its task to create three pop-up displays for use in a unique travelling display box created and designed by Peter Muir and Rob Adlam under direction of our curator, Christina Han. When two of the team left the project, the work continued to research, design and curate two displays to be used for future visits to neighbouring museums, each with a gala opening including a play written and directed by Peter and performed by the Brant Theatre Workshops.

Lillia, Christina, Cassie and Jean have continued to complete the project using two themes -- *Fibers and Fabrics* and *Communications*. They are now in the final stages and are preparing the Final Report for the **Ontario Trillium Foundation.**

The current display on the theme *Inventions, Industries and Marketing* has been at the Paris Museum and Archives since our Gala Opening in August. It will be moved to Myrtleville for several months, and then on to Waterford for three months beginning in February. We are grateful to the **Ontario Trillium Foundation** for providing the funding for this very successful project. The display box can be used for many future travelling displays and special events.

ARMENIAN CULTURE RETURNS TO BRANTFORD

This year's successful series of events planned by collaborating partners **Brant Museum and Archives**, **CIHC, Brant Theatre Workshops** ,and **Laurier Brantford** was created on the theme **The Armenian Immigrant Memories of Brantford.** The introductory event was held in the spring at the **Brant Military Heritage Museum.**

The main event, on September 28th and 29th was a huge success, with a total estimate of 500 participants.

At the grand opening of a display curated by Christina Han at **Brant Museum and Archives, Town Crier David McKie** made the official announcement and **Nathan Etherington** introduced **Mayor Kevin Davis** who cut the red ribbon and announced the official opening of the event.

Christina Han introduced the exhibit which she curated, and many of the visiting Armenians were thrilled to see their family artifacts, portraits, crafts and panels with their contributed stories. The exhibit fills two rooms of the museum and will be available to visitors for several months. The museum was open the next day for more viewing of the display.
Two walking tours relating to where the Armenians lived and worked were led by **Brian Moore**.

On Saturday and Sunday afternoon, performances of **Peter Muir's** play, *You, Me and the Armenian* were held at Laurier in the **Stephen Kun Theatre**

Peter Muir wrote the script and directed the players from Brant Theatre Workshops.

The story is about the search for Brantford's Armenian Roots and involves a helpful ghost at a dinner party.

Armenian Culture Performance

The Saturday event culminated at the Stephen Kun Theatre where a brilliant performance was given by the Hamazkayin Erepuni Dance Ensemble, and Armenian music by the HamazkayinKousan Choir and the HamazkayinHye Asdgher Youth Choir.

There were about 100 performers, all professional, poised and interestingly costumed. The audience was delighted!

We congratulate the team which made this event so successful, and recommend that you take a look at the wonderful display *Forget Me Not* curated by Christina Han from the contributions of five families who answered her request for artifacts and stories. It will be on display at the **Brant Museum and Archives** until September 2025. Next year's theme will involve immigrant groups with black heritage.

CANADIAN INDUSTRIAL HERITAGE CENTRE

Membership Form

CANADIAN INDUSTRIAL HERITAGE CENTRE

Benefits of Membership in the CIHC...

- Participation in the Annual General meeting, and the election of directors.
- Regular updates on our activities through the CIHC Newsletter
- 10% Discount on most Purchases
- Special invitation to all CIHC events

Your Membership Helps us All...

- Expand and conserve the CIHC collection
- Advocate for the preservation of our extensive industrial heritage
- Promote awareness of the industrial and innovation heritage and its importance to our future and quality of life
- Liase with other national and regional heritage groups

MEMBERSHIP STATUS - RENEWAL ☐ NEW ☐ DATE: ____ /_____ /202__

Name: _____

Mailing Address: _____

City, Prov.: _____ Postal Code: _____

Telephone: _____

Email: _____

Membership Fees category: Student $10 ☐ Individual $20 ☐ Family $25 ☐

Family Member(s) at Same Address _____

I hereby consent to receive information by electronic-transmission from CIHC ☐

Yes ! I would like to make a donation to the CIHC of $ _____

Donations of $20 or more above membership fees are tax deductible.
Charitable number #861470623RR0001

Method of payment: - Cheque ☐ Cash ☐ OnLine ☐

Please Make cheques payable to the Canadian Industrial Heritage Centre.
Our mailing address is - P.O. Box 23055, Brantford, ON N3T 6K4

Membership Fees are for the Calendar Year. Those joining after October 1st will be entitled to membership through to the end of the following calendar year.

visit - www.canadianindustrialheritage.com/membership - To Pay on-line

Are you interested in volunteering with us ? ☐

Areas of interest/comments/suggestions: _____

Information collected on this form is for CIHC membership records only.

1.02.2023drw