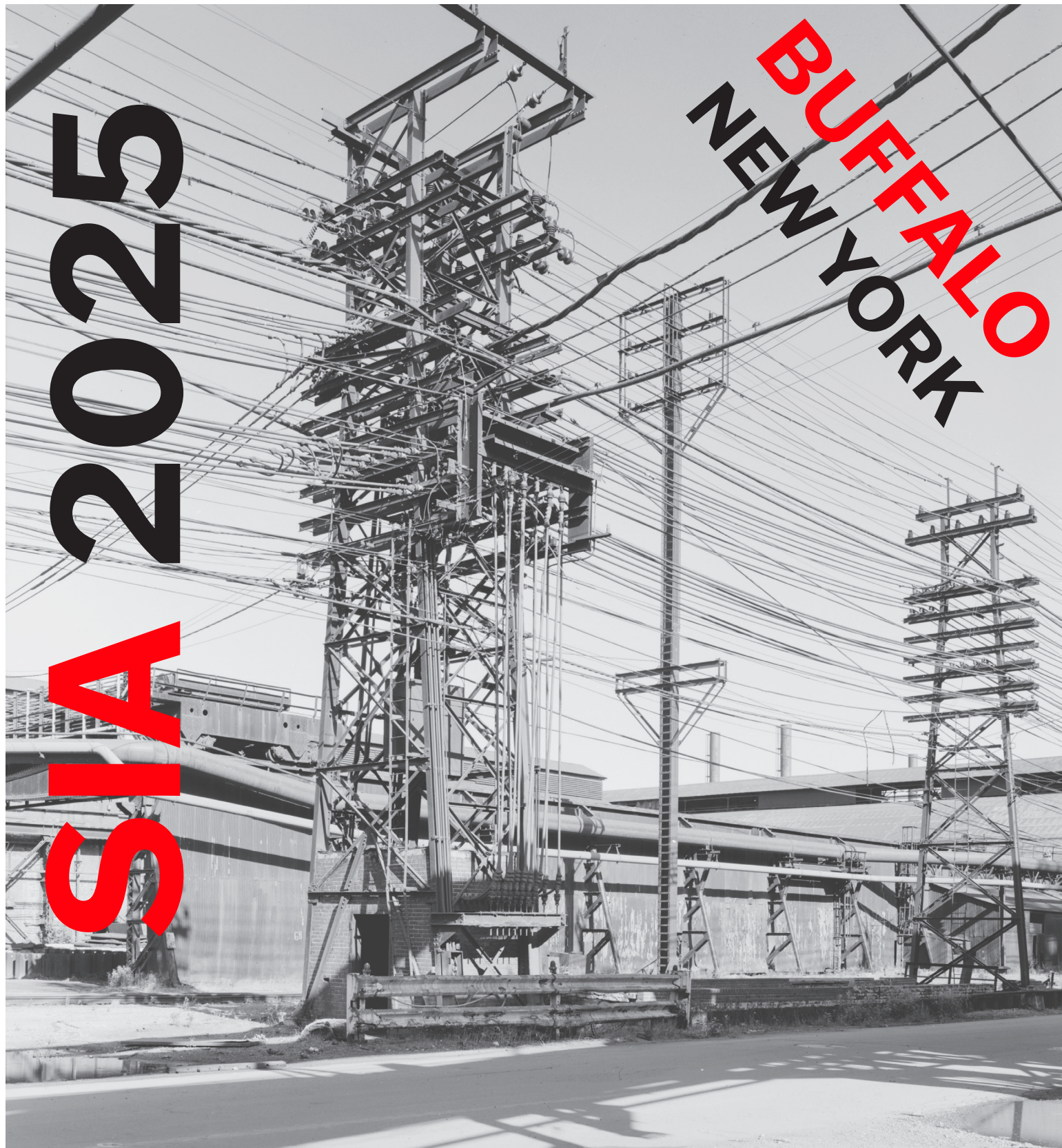




SOCIETY FOR INDUSTRIAL ARCHEOLOGY
53rd ANNUAL CONFERENCE
MAY 29 - JUNE 1, 2025
GUIDEBOOK TO BUFFALO, NEW YORK

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

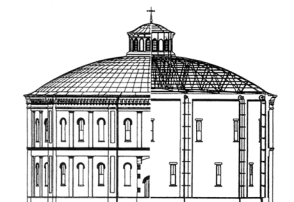
**53rd ANNUAL
CONFERENCE**

**MAY 29 - JUNE 1, 2025
BUFFALO, NEW YORK**

**GUIDEBOOK TO
BUFFALO**

SOCIETY FOR INDUSTRIAL ARCHEOLOGY
MICHIGAN TECHNOLOGICAL UNIVERSITY
1400 TOWNSEND DRIVE
HOUGHTON, MI 49931-1295

www.sia-web.org



GUIDEBOOK CONTRIBUTORS

Patrick F. Ryan
Annie Schentag
Kerry Traynor
Greg Delaney

EDITED BY

Lisa Murray-Roselli
Patrick F. Ryan

LAYOUT

Daniel Schneider

COVER IMAGE

Electric power lines in vicinity of west billet yard, 32" mill view looking southeast – Bethlehem Steel Corporation, Lackawanna Plant, Route 5 on Lake Erie, Buffalo, Erie County, NY. (HAER Photo)

INDUSTRIAL CROSSROADS: BUFFALO AND THE NIAGARA FRONTIER REVISITED

CONTENTS

4 Acknowledgements

INTRODUCTION

7 Buffalo, New York: An Overview Of Its Industrial Past

TOUR & EVENT SITES

18 Tour & Event Times

Thursday, May 29

19 T1 - Explore Buffalo Walking Tour

20 T2 - Forest Lawn Cemetery / Frank Lloyd Wright's Martin House

22 T3 - Hydroelectricity in Canada at Niagara Falls

Friday, May 30

24 F1 - Erie Canal Locks and Water Pumping Station

28 F2 - Buffalo's Elmwood Village, West Side, and the Lake Erie Waterfront

36 F3 - Industrial Processes and Products, Past and Present

42 F4 - Harnessing the Power of Niagara Falls

Sunday, June 1

47 S1 - Buffalo Harbor Cruise

48 S2 - Explore Buffalo Walking Tour & Edward M. Cotter Fireboat

49 Things To Do While In Buffalo

ACKNOWLEDGEMENTS

BUFFALO COMMITTEE

Paris Roselli, Kerry Traynor, Annie Schentag & Patrick F. Ryan

PRESENTATION CHAIR

Marty Johnston

GUIDEBOOK CONTRIBUTORS / TOUR LEADERS

Annie Schentag, Kerry Traynor, Greg Delaney, Bradley Everdyke, Patrick F. Ryan & Lisa Murray-Roselli

SIA TOUR HOSTS

Richardson Olmsted Campus: Patrick Ryan

Explore Buffalo: Brad Hahn

Edward M Cotter: Michael Kick

Niagara Parks Power Station: Erin Clarke

Niagara Falls Water Board: Mike Eagler

Forest Lawn Cemetery: Amizetta Haj, Julie Snyder

Frank Lloyd Wright's Martin House: Monica Stage, Jessie Fischer

GM Components Lockport Operations: Lindsay Romano

Lockport Locks: Mike Murphy

Colonel Ward Pumping Station: Peter Merlo

Buffalo Maritime Center: Mike Casella

Pierce Arrow Factory: John Lydon - Lydon Architecture, Tom Wall - Great Arrow Management

Hadley Exhibits: Fotini Galanes, Ted Johnson

Great Lakes Pressed Steel: Tim Nichols

Rigidized Metals: Chip Skop, Dee Hartman, Rick Smith

Fabrication Workshop - UB's School of Architecture and Planning: Stephanie Cramer

Oxford Pennant: Dave Horesh

500 Seneca: Luke Cusack

Silos at Elk: Young + Wright Architectural

Buffalo RiverWorks staff

ADM Buffalo: George Siradas

Silo City: Josh Smith, Dee Hartman, Rick Smith

Carmina Wood Design: Paul Lang, Carmina Wood

Herschell Carrousel Factory Museum: Ian Seppala, Shirley Burgess

New York Power Authority / Niagara Power Project: Teresa Martinez, Jairo Florez

New York Power Authority: Angela Panaro Rossi, Richard Smith

Buffalo Sewer Authority: Rosaleen Nogle, Adam Sassone

Buffalo Harbor Cruises: Rachel Siller

ORGANIZATIONS / SPONSORS

Lipsey Architecture Center Buffalo & kta preservation specialists

AS WELL AS

SIA Board, Daniel Schneider, Staff at Visit Buffalo Niagara, Preservation Buffalo Niagara, John Mayer, Barbara Rowe, Alex Emmerson, Staff at Duende Silo City & Camden Miller

SIA EVENTS COORDINATOR

Courtney B. Murtaugh

SIA BUFFALO 2025

INTRODUCTION

BUFFALO, NEW YORK: AN OVERVIEW OF ITS INDUSTRIAL PAST

Buffalo's Geographic Advantages for Industry

Geography played an essential role in the development of the Buffalo's industrial sectors in the early 1800s. Situated at a confluence of waterways, Buffalo emerged as a city at the crossroads of the East Coast and Midwest. Positioned at the eastern edge of Lake Erie and the western edge of New York State, Buffalo quickly became a vital shipping and transportation hub. Several rivers flow through the city, enabling ships safe passage into the city's many harbors rather than solely on the edge of the lake. In the early nineteenth century, shipping via waterways was substantially more affordable than shipping goods by land. By the 1830s, Buffalo occupied a key location in American transshipment networks, at the west end of the Erie Canal. This meant that most products, goods, and people had to go through Buffalo on major east-west routes.

The City of Buffalo is situated on the easternmost point of Lake Erie, and along the eastern shore of the Niagara River south of Grand Island. It is part of the Saint Lawrence Seaway, a network of navigable waterways connecting the Great Lakes and the Atlantic Ocean. By water, the harbor can be accessed by eastbound traffic from Lake Erie, as well as westbound traffic from the Niagara River, and the New York State Barge Canal System. It is also situated to the south of Niagara Falls and Lake Ontario, which would become pivotal in its access to hydroelectricity by the end of the nineteenth century.

Buffalo's harbor consists of three major components: The Outer Harbor, Inner Harbor, and Black Rock Channel. The Outer Harbor is a section of the Lake Erie shoreline protected by a man-made breakwater between the Buffalo River and Smokes Creek. This area includes a sheltered water channel between the Buffalo River and Lackawanna, the region's main port facility along the Lackawanna Ship Canal, and a dormant inlet called the Union Ship Canal. The Inner Harbor consists of the lower 5.5-mile portion of the Buffalo River and the City Ship Canal. The third component is the Black Rock Channel, which runs along the east side of the Niagara River, approximately between Lake Erie and

the northernmost point of Unity Island. This area features a man-made breakwater to protect vessels from the river current, as well as the Black Rock Lock to descend vessels to lower waters.

The harbor is protected from Lake Erie and the Niagara River by a series of breakwaters. These man-made structures allowed expansion of the harbor by providing areas of sheltered water, which ultimately helped Buffalo win the bid as the chosen terminus of the Erie Canal. The original breakwaters were built as part of the Erie Canal project and are still functional today. These include a stone pier at the mouth of the Buffalo River and the Bird Island Pier, which runs along the Niagara River between Squaw Island and approximately the present location of the Peace Bridge. By 1854, a section was constructed just north of the canal terminus sheltering the Erie Basin. In 1872, a small section was built farther away from shore, south of the Buffalo River, forming the first version of the Outer Harbor. Bird Island Pier was extended southward in 1871, creating a protected section of the lake and riverfront between the Erie Basin to Squaw Island. By 1901, the Outer Harbor Breakwater was extended southward to the city line creating a sheltered shoreline over all of Buffalo's Lakefront.

Buffalo's harbor entered a period of tremendous growth in the early nineteenth century. It was then that the prospect of a Buffalo terminus for the proposed Erie Canal attracted speculators seeking to profit from acquiring land in what would soon become a busy inland port. Joseph Ellicott and the Holland Land Company surveyed and purchased much of the land in Western New York, and then quickly sold parcels to investors as the canal proposal drove prices upward. This attracted a group of wealthy investors to the region seeking to profit from the commercial activity resulting from the opening of the new trade route. This group of elite newcomers became an influential force that would prove to be the deciding factor in locating the canal terminus in Buffalo instead of upriver in the Village of Black Rock.

The Erie Canal

The Erie Canal, first opened in 1825, was America's most successful and influential manmade waterway, facilitating and shaping the course of settle-

ment in the Northeast, Midwest, and Great Plains. It connected the Atlantic seaboard with territories west of the Appalachian Mountains, carrying products of the North American interior to markets throughout the Atlantic world and establishing New York City as the nation's premier seaport and commercial center.

Buffalo is located at the western end of the Erie Canal, at its confluence with the Niagara River. From there, boats go upstream on the Niagara River, passing through the U.S. Army Corps of Engineers lock at Black Rock and the Black Rock Canal in order to reach Lake Erie. Earlier versions of the Erie Canal had an independent channel hugging the east bank of the Niagara River that led to Buffalo Harbor.

Opened in 1825, the Erie Canal made it possible to efficiently trade goods between the Midwest and Northeast by offering a direct route between New York City and the Great Lakes. The route started on the Hudson River near Albany and ended on the Niagara River in Buffalo. While the canal provided an unprecedented connection, traveling between Buffalo and Albany on the Erie Canal took four days. Much of this time was spent in locks, which raised or lowered the water level in the canal to allow barges to continue their travels.

The first iteration of the Erie Canal was 363 miles long and had 86 locks to make up the 571-foot difference in elevation between the Hudson River and Lake Erie. The original Erie Canal and connecting canals throughout upstate New York had channels that were 40' wide at the surface, 28' wide at the bottom, and 4' deep, with stone lock chambers 90' long by 15' wide with timber gates that could pass boats of 70 gross tons. Choked by its own success, the Erie was later enlarged during the nineteenth century to reduce congestion and allow passage of larger boats. The first enlargement, pursued off and on from 1836 through 1862, provided larger lock chambers and deeper channels on the main branches of the system and side-by-side chambers on the Erie to ease traffic.

Built through largely unsettled territory, the Erie was more than twice as long as any canal in Europe and wholly unprecedented in North America. It was a source of national pride throughout the young republic and an object of wonder to foreign visitors. Construction provided on-the-job training for a generation of engineers and builders who went on to construct many of the new nation's other canals, railroads, harbors, and public water supplies.

The completion of the Erie Canal solidified Buffalo's location as pivotal—situated on a new trade route linking the Great Lakes and the Eastern Seaboard. Lake vessels would haul their cargo eastward to Buffalo where it would be transferred to canal barges and shipped across the state to New York City. Initially, the dominant product shipped through Buffalo was Midwestern grain; however, other commodities were later shipped through Buffalo as merchants sought to diversify their operations beyond the grain market. The seemingly endless demand for dock space prompted the city to enlarge the harbor area with construction of a series of canals feeding off the Buffalo River. As demand continued to rise, and lake vessels grew larger, additional canals and a series of breakwaters were constructed on the city's lakefront. In addition, Buffalo's population grew and diversified as thousands of immigrants from Ireland, the German States, and the rest of the United States came to Buffalo seeking employment and business opportunities on the waterfront.

The storage, transfer, and manufacturing structures standing in the vicinity of Buffalo's harbor represent a critical piece of history in the development of Buffalo, New York State, and the Great Lakes region of the United States. They stand as monuments to a period in American history when waterborne commerce transformed a sparsely populated, vast frontier into a dynamic and diverse region that would lead the way for America's rise to global prominence. It was during this time that commerce resulting from the Erie Canal created a trade route between East and West. This led to the rapid growth of Buffalo, attracting thousands of people from North America and Europe. Buffalo's transition from frontier outpost to bustling international port would enable development of the entire Great Lakes Region, New York State, and the Eastern Seaboard. Moreover, Buffalo's rise to prominence was a microcosm for a similar transformation occurring throughout the rest of the nation.

Transshipment Networks and Railroad Infrastructure

The confluence of waterborne and railroad shipping was largely responsible for Buffalo's industrial and commercial boom in the nineteenth century. The year 1842 was a transformational one for the city: Joseph Dart erected the world's first grain elevator, the city's first rail line was constructed, the Erie Canal was in its early prime, and the recently-built Lake Erie Breakwaters had transformed Buffalo's harbor. The city emerged as a major hub of transshipment, where

products and people utilized the interconnected water, rail, and road networks that made Buffalo an important crossroads of industry and culture.

Shortly after the Erie Canal fully opened, trains threatened its dominance by offering more time-efficient travel. Although trains provided a quicker connection, legislation ensured that canals remained the cheaper freight transportation option, so early train lines served primarily as passenger lines. In 1830, the Mohawk & Hudson Railroad was incorporated, connecting Albany and Schenectady by rail and allowing passengers to bypass the cumbersome canal in that area. After the Mohawk & Hudson incorporated, other railroads began to develop and connect the cities of New York State. Despite the financial risks involved in investing in railroads, by 1843 passengers could take a train between Buffalo and Albany in twenty-five hours, making railroads the preferred transportation network for travelers.

In Buffalo, four railroads chartered between 1833 and 1842 connected the city to other urban centers in New York State. Each railroad terminated in Buffalo near the waterfront, and by 1853, the city had three passenger stations at Erie Street, Exchange Street, and Michigan Avenue.

The first two lines were constructed by 1850. The Buffalo-Niagara Falls Railroad ran from Niagara Falls, along the Niagara River, to the junction of the Commercial Slip and Erie Canal. The Attica-Buffalo Railroad stretched from Attica, NY to Buffalo with the mainline ending at the Main-Hamburg Canal and a spur running south to the Buffalo River. By 1866, two more lines were added. The New York-Erie line, connecting New York City and Buffalo, terminated along the Main-Hamburg Canal, parallel to the Attica-Buffalo terminus. The Buffalo-Erie line spanned from Chicago to Buffalo, terminating with the other lines along the Main-Hamburg canal.

After the state legislature removed the restrictions that favored the Erie Canal's freight business in 1851, railroads quickly expanded and began developing the capacity to move large quantities of freight in addition to passengers. In 1853, the eight major railroads operating in New York State merged into the New York Central Railroad. At its inception, the new conglomerate had 555 miles of railroad tracks, seventy-six passenger depots, and seventy-two freight houses across the state.

In addition to the interstate rail lines, several smaller spurs and railroad yards were constructed to carry finished goods from factories and transshipment facilities to the main lines. The outer harbor con-

tained a network of lines built by multiple railroad companies servicing factories and warehouses along the lake shore. Ganson Street had several lines running along its right-of-way, servicing the grain elevators along the City Ship Canal and Buffalo River between Michigan Avenue and Ohio Street. The Lehigh Valley Railroad constructed a series of canals at the end of the City Ship Canal, which were used to transfer coal shipments between lake and rail. The Burrows Lot was constructed by the Buffalo Creek Railroad company to service elevators on the Buffalo River between Ohio and Katherine Streets. There were also lines servicing the Main-Hamburg Canal, Ohio Basin, and Erie Canal Terminus. These were often built in clusters by several competing railroad companies.

In 1883, the New York Central Railroad constructed tracks that encircled the City of Buffalo and connected to the main railroad network. The Belt Line, as it was called, was a fifteen-mile loop that transported people and goods around the city and provided connections to the larger railroad system that connected Buffalo to the rest of the country. Located along the Belt Line, Black Rock in particular saw the growth of factories and working class neighborhoods owing to this development. The Belt Line was in operation for approximately thirty years, gradually fading out of existence because of competition from trolley lines and automobiles.

By 1894, Delaware, Lackawanna, & Western (DL&W) had constructed a line connecting Buffalo andinghamton, giving Buffalo merchants another route to the Southern Tier and East Coast. These three lines opened up larger markets along the East Coast and Midwest to Buffalo-based shippers. By the end of the century, branches were added to the Buffalo-Erie Railroad, later known as the Erie Railroad, to connect Buffalo with coal-producing regions in Pennsylvania and West Virginia.

Buffalo quickly emerged as a vital link in the New York Central Railroad's network, and the company developed a vast network of railroads, train yards, depots, and freight houses to accommodate the growing industrial city. Three areas of the city – the East Side, the waterfront, and Black Rock – became major railroad hubs. The New York Central Railroad's train yards dominated the East Side near Broadway and a huge meatpacking and slaughterhouse business emerged alongside the East Side railroad tracks. In addition to the massive freight yard, the New York Central Railroad operated a passenger terminal on the East Side, not far from where the New York Central Railroad's Central Terminal was built decades later, in 1929.

Buffalo's harbor was at the center of a continental shipping network of lake, rail, and canal transit extending in all directions. The access to coal, combined with iron ore shipped over the lakes, and hydroelectricity from Niagara Falls, enabled steel producers to locate factories in the Buffalo area. The railroad infrastructure and electricity also enabled other manufacturers to locate in the harbor region. Grain elevators constructed during this period often had attached processing mills, enabling manufacturing of grain-based products, as well as storage and transshipment. Multiple types of industries developed and thrived in Buffalo during the nineteenth and twentieth centuries, a few of which are highlighted below.

Major Industries

Lumber

Straddling Tonawanda Creek to the north of the City of Buffalo, the area of the Tonawandas developed as a major stop for the transshipment and processing of lumber. When the first settlers arrived, large swaths of forested land covered the area, setting the stage for the lumber industry. After 1812, the timber and lumber trade was at its outset. Lumber dominated the local economy and was named the "prevailing feature of business" as early as 1878; by the 1880s, North Tonawanda itself was being referred to as the "Lumber City."

Lumber and timber from the forested areas of Michigan and Canada could be inexpensively shipped on barges across the Great Lakes to the Tonawandas, planed, dressed, and processed, and then transported by rail and canal to markets in the east. Many people were employed unloading, sorting, and shipping lumber to eastern markets. Saw, lath, planing, and shingle mills, as well as storage areas and docks for loading and unloading lumber, stretched for miles along the Niagara River shoreline. Lumber products such as logs, sawn and planed lumber, rough cut timber, shingles, and lath were processed and sent on their way.

By 1891, the lumber industry was booming—by local accounts, second only to Chicago as a market for lumber. After 1891, Chicago's place was bested by the Tonawandas twice in its history—in both 1903 and 1906, at the peak of the lumber industry. Between ca. 1870 and ca. 1900, over 60 companies associated with the lumber trade had flourished in the Tonawandas, contributing to the rapid commercial and residential development of those areas spanning Tonawanda Creek and the Erie Canal.

Grain

To discuss grain elevators is to discuss Buffalo, which still has the largest extant collection of grain elevators in the world. As scholars Robert Shibley and Lynda Schneekloth rightfully assert, "The entire history of the transformation of the urban elevator – wood to tile to steel bin to reinforced concrete – is represented by the elevators in Buffalo." The differences between these 'urban' grain elevators and rural grain silos are somewhat nuanced, but these differences also associate them with disparate parts of the country and its complex chain of operations in the grain process. Grain silos are more common in the Midwest and other heavily farmed areas, where harvested corn, barley, or wheat is stored until it is later distributed to other areas. In contrast, grain elevators are more often seen in urban areas, particularly at transportation hubs such as Buffalo. While silos only store and weigh the grain, elevators can also receive, weigh, and transport it along water or rail; process or grind the grain into products like flour; and provide hubs for the grain industry to trade or distribute products.

In 1804, the year Buffalo was founded as a city, the cheapest and most common way to send grain from Buffalo to New York City was by shipping it across the Great Lakes, down the Mississippi River, through New Orleans and then up the Atlantic Ocean. This lengthy and indirect route took roughly six months and cost approximately \$30 per ton, whereas sending grain directly overland from Buffalo to New York City via New York State cost nearly \$100 per ton. The poor conditions of roads and overland shipments was soon remedied by the construction of the Erie Canal in 1825, which solidified Buffalo as a fundamental city located at the western terminus of the canal. This manmade waterway, combined with the several waterways naturally flowing through and around the city, ensured that Buffalo would become, and remain, an essential hub between the east coast and the Midwest for decades to come.

Grain was the largest market in Buffalo's shipping industry, and it was funneled from the breadbasket of the Midwest to New York City and the East Coast through Buffalo. In the early nineteenth century, the process of transferring grain from Great Lakes vessels to boats on the Erie Canal was slow, inefficient, and therefore not nearly as profitable as it could be. Grain was typically bagged in sacks and transferred bag-by-bag via individual laborers from vessel to vessel. This backbreaking work was extremely slow, and it would often take several days to unload a vessel, crowding the waterways and causing massive delays. The grain elevator arose

in response to this demand for a better system to weigh, transfer, and store grain in between shipping vessels.

Joseph Dart's 1842 invention of the grain elevator in Buffalo, introduced a system that drastically reduced the number of laborers required to transfer grain and expedited the process tenfold. Urban manufacturing, rather than rural agriculture, provided the initial inspiration for this innovation, as Dart based his initial plans on Oliver Evans' design for a steam mill in Delaware. Dart, along with the often-forgotten engineer Robert Dunbar, devised a plan for the grain elevator that blurred the lines between building and machine. The basic functions of this initial grain elevator were rudimentary but effective and can still be seen to some degree in the modern grain elevators that arrived in the generations after this original design.

Dart's first elevator consisted of a wooden structure that provided storage space for the grain, accompanied by a steam-driven belt that had buckets attached to it. Rather than relying on laborers to lift the grain bag by bag, the belt would be lowered into the ship in a manner that effectively made this portion of the structure the first 'marine leg,' as the device would come to be called in subsequent structures. This marine leg was outfitted with buckets that would scoop up the grain and load them into the wooden structure. This drastically reduced the time required to unload a shipping vessel: Dart's first elevator could unload 1000 bushels an hour. Three years later, this rate was doubled.

In the span of just a few years, Dart's elevator system had dramatically changed the pace and storage capacity of the grain industry. Just fifteen years after the first elevator was built, ten more were in operation near the Buffalo harbor, with a combined storage capacity of 1.5 million bushels. Buffalo quickly became the world's largest grain port, surpassing much larger European cities such as London and Rotterdam.

The invention of the grain elevator not only had a notable impact on the history of architecture and engineering but also was largely responsible for establishing Buffalo as a major American city. The growth of the grain industry, like the city, was exponential. By 1850, Buffalo had become the largest grain and flour market in the United States and would remain so until Chicago's growth during the 1880s. By 1855, Buffalo's grain elevators had transshipped a total of 19,788,473 bushels of grain, which meant that half the grain in America went through Buffalo in that year. Just a few years later, in 1859, over 51 million bushels of grain were trans-

shipped in Buffalo, which is roughly enough to provide a year's worth of food for 10 million people. In 1865-1866, the Port of Buffalo was the world's largest grain depot. Put simply, to think of Buffalo in the nineteenth and early twentieth centuries meant to think of grain and grain elevators.

The rapid development of railroad lines during this time further solidified Buffalo's role as a shipping and transportation nexus, and more than thirty different railroad lines utilized the city's extensive network by the late 1800s. The terminal grain elevator became a fundamental subtype of this typology, designed specifically to incorporate rail lines by transferring grain directly from a shipping vessel on the waterfront to a railroad car on land. Situated between a waterway and a railroad line, elevators like the Connecting Terminal complex represents just one example of the evolution of grain elevator design to suit new external technological demands. With a marine leg on one side and rail access on the other, terminal elevators were essential structures in the process of transferring grain from a shipping vessel to an overland railroad car.

The grain elevator continued to transform throughout the nineteenth and early twentieth centuries, incorporating a number of design solutions that improved structural function, efficiency, and durability. Many of the catalysts for improvement were related to the erratic behavior of grain, which created a number of problems for the engineers hired to design increasingly large and complex elevators. In bulk quantities, grain acts more like a liquid than a solid, creating two main pressure forces on the walls of a grain elevator. In order to accommodate the pressure that loose grain exerts both downwards and laterally on the retaining walls, grain elevators must be quite tall.

Fireproofing was a major concern in the history of transformations that grain elevators, and many other building types, underwent from the nineteenth to the twentieth centuries. In bulk, grain is highly flammable. Grain dust, particularly when placed in close quarters with steam powered or electric powered equipment, can create explosions and fires at a moment's notice. The concern for fireproofing is particularly evident in the material evolution of the grain elevator, which began with Dart's wooden elevator, and then experimented with steel and tile forms at the turn of the twentieth century before creating the reinforced concrete elevators that dominated early-twentieth-century construction.

In the years surrounding World War I, several reinforced concrete elevators were built in Buffalo, each surpassing the last in size. In 1917, the Concrete

Central Elevator was built along the Buffalo River, with a capacity of 4.5 million bushels. As a terminal transfer elevator, it featured three marine legs on the waterfront side that could unload three marine vessels at a time, and the rail side enabled crews to load and unload twenty rail cars in a single hour. The sheer scale of the Concrete Central Elevator was made possible by the use of reinforced concrete, and at the time of its completion, it was the largest grain elevator in the world.

By 1931, Buffalo had thirty-eight working grain elevators with a combined capacity of over 47 million bushels of grain. Just one year later in 1932, the Welland Canal was extended to connect Lake Ontario to Port Colborne on Lake Erie, threatening Buffalo's role as a crossroads city for grain. Due to the enormous amount of infrastructure in place, however, Buffalo continued to play a vital role in the national grain market for two more decades, reaching its height in the mid-1950s.

In 1959, the opening of the St. Lawrence Seaway forever changed the geographical advantages that Buffalo had in the grain market, and the industry continued to decline into the early twenty-first century. The year 2002 marked the end of an era, when the last grain scooper in Buffalo, and the world, finished his final day's work.

Today, there are a few major grain elevators still operating. These include the former Washburn Crosby complex, now operating as General Mills, where most of the nation's Cheerios cereal is still made. By 2003, the majority of Buffalo's remaining grain elevators had been placed on the National Register of Historic Places and were thoroughly documented by Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER). Additionally, the grain elevators have undergone revitalized public attention in a new context, and many are currently being repurposed for artistic installations, cultural events, and historic tours.

Iron

By the mid-1800s, Buffalo also became a major center for the smelting and refining of iron ore. Previously remote from raw material sources, Buffalo's intermediate location between western ore and eastern coal became advantageous as water and rail transportation improved, particularly with the opening of the Sault Ste. Marie Canal in 1855. Unfortunately, little physical trace remains to mark the sites of the iron works established during the 1860s.

On the peninsula once known as Farmer's Point, where Hamburg and Katherine Streets meet the

Buffalo River, two partnerships began building blast furnaces in 1860-1861. The companies eventually merged and expanded as the Union Iron Works before succumbing to hard times following the Panic of 1873. Another blast furnace was constructed during 1863-1864 in the Black Rock section where what is now Hertel Avenue crossed the Erie Canal and ran down to the Niagara River. Known as Fletcher's Furnace, this project marked the continued backward integration of Pratt & Co. from hardware merchandising into iron manufacturing. In the late 1850s, the same firm had acquired the 1847 iron and nail works at the junction of Scajaquada Creek, Niagara Street, and Forest Avenue, where the processes of puddling and rolling had been introduced to Buffalo.

All Civil War-era blast furnaces used anthracite for fuel since mines in eastern Pennsylvania were readily accessible via rail and canal. Furnace charges included ore from the upper Great Lakes combined with iron from Lake Champlain and other districts in Ohio and Canada. The stacks featured energy-saving closed tops and vertical hoists to facilitate the constant process of dumping raw materials into the furnace.

State-of-the-art technology alone could not keep Buffalo's first-generation blast furnaces in business, however. The plant at Tonawanda, established in 1873 as another venture by Pascal Paoli Pratt and associates, never really got off the ground. The furnaces at the Union Iron Works were blown out in 1876. Fletcher Furnace was rebuilt in 1881 to use coke, but the changeover to a more efficient fuel provided little help; the stack was finally dismantled in 1885. Despite Buffalo's strategic geographic position, its iron industry did not prosper as automatically as the grain trade.

A key figure in the revival of local pig iron production was Frank B. Baird. After settling in Buffalo in 1888, he swiftly mobilized business and political connections from his native Ohio to rekindle idle blast furnaces on the Niagara Frontier. Tonawanda, dormant for 15 years, resumed operations after a capital transfusion from Rogers, Brown & Co., Cincinnati pig iron dealers. Baird relied on a similar relationship with MA Hanna & Co. of Cleveland to bring about the 1900 consolidation of the Buffalo Union Furnace Co., comprising three new stacks on the 1860s' site of the Union Iron Works.

Capital drawn from out of state thus helped make Buffalo a major center of low-cost pig iron production in the early 20th century. However, such investments also isolated plants and jobs from the context of community development that John Wilkeson had

advocated. Many decisions concerning expansion or contraction would henceforth depend on cost and profit calculations by corporations without significant local ties. Frank Baird, who had disposed of his share in Buffalo Union Furnace to the Hanna interests in 1920, warned of the dangers inherent in the loss of local control before his death in 1939.

The consequences of Baird's initial successes extended beyond his own enterprises. The resuscitation of rusting sites dispelled the investment community's lingering doubts about the potential profitability of iron and steel in Buffalo. As the area became a magnet for heavy industry after 1900, established lines of production such as merchant pig iron grew even stronger. In 1904-1905 the Buffalo & Susquehanna Iron Co. blew in new blast furnaces in South Buffalo on the Union Ship Canal. Other plants, though, undertook something new to the area—the making and shaping of steel.

Electricity

The transmission of electricity from Niagara Falls to Buffalo was a groundbreaking event, which had multiple impacts on the industrial development of the region and, eventually, the nation. The implications of this first long-distance transmission of power were enormous. As one journalist reflected, it represented “one of the boldest engineering and commercial feats of the past century... [and] the signal for the utilization of water powers all over the world.” The introduction of large-scale, long-distance hydroelectric power in the late nineteenth century was marked by a series of sudden technological developments, dramatic visual effects, and even utopian visions of unhindered industrial potential. Electrical current generated at the Adams Powerhouse in Niagara Falls was transmitted to the city of Buffalo twenty miles away, making a significant impact on the world.

Beginning in the late 1870s, industrial companies began establishing themselves along the banks of the Niagara River and Gorge in an attempt to utilize hydroelectricity. Lumber and aluminum manufacturers typically utilized locally-sourced power generated from the fast-moving River and Falls in the form of mills, making Niagara Falls an industrial hub several decades prior to the development of large-scale hydroelectric power generation and long-distance transmission that occurred in the 1890s. While many industries, mills, and manufacturers were drawn to the Niagara waterways, most of the hydroelectric power was only available in the immediate vicinity until developments in the 1890s facilitated the ability to transmit power over longer distances.

In 1889, the Niagara Falls Power Company (NFPC) and the Cataract Construction Company (CCC) were formed, led by Edward Dean Adams. They hired Thomas Evershed, an engineer specializing in canals, to find a way to develop and transmit past the Niagara Riverbanks. Evershed grappled with the problem of generating large-scale hydroelectric power for another decade, when he recommended digging a large canal to run parallel to the Niagara River. This canal would run from the upper Niagara River to the lower Niagara River, utilizing the Falls themselves. The canal was intended to function in conjunction with a massive underground tunnel, which would feed several vertical shafts containing turbines to power the factories located above ground. Evershed envisioned the tunnel as a wide, ice-proof causeway that would travel over two miles underground along the length of the Niagara River and under the town of Niagara Falls. The tunnel was bored out of solid rock, with eight foot-thick limestone walls that were lined with brick to prevent seepage. During the construction of this 6700 feet-long tunnel, over 600,000 tons of limestone and other naturally occurring materials were removed from the ground by over 2500 workers in a span of two years.

The years between 1890-1895 were pivotal in the global history of hydroelectric power generation and transmission, and the majority of this innovative activity occurred at Niagara Falls. Important events in this history occurred in quick succession, and as new technologies emerged, others quickly became outdated. Construction on Evershed's hydraulic canal began in 1890, at a time when the NFPC still had not selected a way to transmit the power they planned to generate there. Within just two years, the Evershed tunnel and canal were completed, but it took another year for the NFPC to be convinced that Tesla's alternating current system was the safest, most efficient, and most economical way to transmit power over distances. During this time, the War of Currents raged on between renowned inventors Nikola Tesla and Thomas Edison, who raced to develop safe, reliable electricity that could be transmitted over long distances.

Developed first by Nikola Tesla and then patented by Westinghouse, alternating current soon offered the best way to transmit electric power over long distances. Working from his New York laboratory in the late 1880s, the famous engineer invented a motor that used alternating current, rather than Thomas Edison's direct current. George Westinghouse, looking to break Edison's electric monopoly and profit, bought the patents for Tesla's alternating current motors, for much less than they soon proved to be worth. Westinghouse's display at

the Columbian Exposition of 1893 proved to be convincing enough for the NFPC, and with the recent completion of Evershed's hydraulic canal and tunnel, they began moving forward with plans for a power station to generate and transmit the hydroelectricity developed there. Construction began on the Adams Powerhouse in 1894 and by 1895 the building was complete. By November 1896, the first power transmission was sent by alternating current methods from the Adams Powerhouse to Buffalo, marking the largest amount of electricity transmitted the longest distance in the world.

Not only did this technology forever change the region and the nation, but it also made a remarkable impact on the physical infrastructure of the city of Buffalo. Public services and industrial facilities were quick to utilize this power. Powerhouses, transmission stations, factories, warehouses, and transportation infrastructure were built rapidly throughout the city in order to take advantage of this newly available electricity. While the first decade of electrical transmission was aimed at providing energy for industries, city services, and transportation networks, the American public increasingly adopted electricity into their lifestyles and their built environment in the early twentieth century.

The availability of hydroelectric power also recast the economic base of Niagara Falls as electrochemical and electrometallurgical companies found a desirable location for energy intensive production processes. The electrolytic cell and the electric arc furnace displaced older, slower, and more expensive methods for manufacturing caustic soda and chlorine compounds, reducing metals such as aluminum, or producing novel materials such as the artificial abrasive, carborundum. Over time, many other industries would thrive in the region owing to the hydroelectricity developed at Niagara Falls and transmitted to Buffalo and beyond.

Steel

The establishment of the Lackawanna Steel plant was another major factor that contributed to the rapid development of the Buffalo region in the early twentieth century. When the Lackawanna Iron and Steel Company purchased 400 acres along the shore of Lake Erie in 1899, development of the area, known now as Lackawanna, began to occur at an unprecedented pace. This steel company, founded in Scranton, Pennsylvania in 1840, was already one of the nation's largest steel companies by the time they expanded their operations to the Buffalo region. Drawn to the area's convenient access to the Great Lakes shipping networks by both waterways and railways, the company's decision to move their

main plant to a location south of Buffalo resulted in Buffalo becoming a major steel hub for generations to come.

The impact of the steel plant on the settlement of the region was tremendous. When the company was reorganized into the Lackawanna Steel Company in 1902, it was the largest independent steel company in the world. With about 6,000 workers at the plant on opening day, 2,000 of which had relocated from Scranton, the company had attracted thousands of new employees to the area, virtually overnight.

As the plant was being constructed and established in the early 1900s, private developers began establishing residential tracts aimed at plant workers who could commute to nearby areas within reach of the streetcar. Suddenly, South Buffalo, which had previously been disconnected from the city's places of employment, was in high demand for the hundreds of new workers that were looking to live near their place of employment.

Encouraged by the success of the Lackawanna Steel plant, other industrial operations were also established in the area. In Blasdell, Seneca Iron and Steel began rolling sheets near the Lackawanna works in 1907. During the same year, New York State Steel (later known as Donner Steel and subsequently a Republic plant) started its open hearths at South Park Avenue and the Buffalo River. Shortly thereafter, Wickwire Steel commenced building a blast furnace at Rattlesnake Island in the Town of Tonawanda on the Niagara River, achieving fully-integrated operations by the First World War. Nearby industries such as the Lehigh Valley Railroad, Lackawanna Iron and Steel Company, the Buffalo Structural Steel Company, the Seneca Iron and Steel Company, National Aniline, and the Goodyear Rubber Company brought many working-class families to live on the land that had once been the Buffalo Creek Reservation. For many generations, this area hosted the steel industry.

Lackawanna Steel Company became a subsidiary of the Bethlehem Steel Company in 1922, and remained so until 1983. In the 1970s and 1980s, Bethlehem Steel allowed the Lackawanna Steel plant to become obsolete. Foreign competition made it financially impossible to continue to manufacture most of the products produced at Lackawanna. In 1982, the Lackawanna steel plant stopped most of its operations, laying off thousands of workers with little notice. Bethlehem Steel maintained a small presence in Lackawanna after the mass layoffs in 1982, ended coke production at the Lackawanna site in 2001, and declared bankruptcy in 2003. In 2006,

the plant came under the ownership of ArcelorMittal, which eventually ended its operations at Lackawanna in 2009. A large portion of the plant burned in November 2016.

Industrial Heritage and Adaptive Reuse

Industrial heritage has become a cornerstone of Buffalo's attempts to rebrand itself as both a tourist destination and a desirable place to live. The city is currently in the midst of a major era of revitalization, often called a Renaissance by journalists nationwide. Urban planners, real estate developers, and city boosters continue to identify historic industrial architecture as a key component to urban revitalization. The Buffalo-Niagara region boasts an incredibly rich, multifaceted industrial heritage that scholars, journalists, and tourists have begun to 'rediscover' in recent years. Multiple tours guide visitors daily through the city's notable buildings designed by Louis Sullivan, H.H. Richardson, and Frank Lloyd Wright, but tourists have also begun to appear with increasing frequency at industrial sites such as the grain elevators, canal locks, and historic waterfront bridges. These tours reflect and encourage a growing public interest in Buffalo's renowned but often ignored industrial architecture and history, and they have been instrumental in rebranding the image of Buffalo as a place with momentum for the first time in decades.

The grain elevators at Silo City have become an important agent in re-familiarizing the public with industrial heritage in Buffalo today. Privately owned, Silo City has hosted several events and projects, including craft beer festivals, weddings, concerts, art installations, poetry readings, and theater performances. Although the grain elevators are no longer functioning as industrial structures, they are increasingly used for a variety of creative endeavors that challenge the notion that these places are 'abandoned.' At the nearby RiverWorks complex, a newly installed rock climbing course rises up the cylindrical walls of a grain elevator, encouraging a tactile experience with this type of architecture.

Active grain elevators also exist in the area, manufacturing Cheerios for instance, although they do not accommodate visitors.

Postindustrial tourism also generates both impediments and inspiration for industrial heritage. As sociologist John Urry has suggested, "The development of an industrial museum in an old mill is a metonymic sign of the development of a post-industrial society." In this sense, it may be the very same act of creating an industrial heritage that defines our own era as postindustrial. Yet, industry still drives Buffalo's economy in some ways, so is the city really 'postindustrial' today?

Postindustrial examples coexist alongside actively working industries, sometimes even next door to one another. Along Niagara Street, for instance, former factories have been adaptively reused as art galleries, restaurants, offices, and apartments. Businesses working in many types of manufacturing and medical technology industries still maintain a physical presence throughout the city and region as well. Digital industries continue to bring jobs and economic growth to the Buffalo region, as do medical health technologies and the biosciences industry. The region's historical relationship to energy derived from natural resources also continues to evolve in this economy. These contemporary industrial places, processes, and workers mingle with the industrial histories of Buffalo, evident in the built environment in each part of the city today.

Buffalo's identity is still intimately linked with industrial structures, but their role in the local economy, community, and built environment has substantially changed. Both historically and contemporarily, industrial architourism in Buffalo has revolved around an attempt to simultaneously connect visitors with the past as well as acknowledge a new era in the present.

During this process of Rust Belt reinvention, industrial architecture takes on new physical forms and cultural meanings, making this history ripe for reinterpretation during Buffalo's revitalization.

SOURCES

Adams, Edward Dean. *Niagara Power*. Niagara Falls, NY: Niagara Falls Power Company, 1927.

Andrews, William. "How Niagara Has Been Harnessed," *The American Monthly Review of Reviews*, June 1901.

Banham, Reyner. *A Concrete Atlantis: U.S. Industrial Building and European Modern Architecture*. Cambridge, MA: MIT Press, 1985.

Banham, Reyner, Charles E Beveridge, Henry-Russell Hitchcock, Francis R Kowsky, and Buffalo Architectural Guidebook Corporation. *Buffalo Architecture: A Guide*. Cambridge, Mass: MIT Press, 1981.

Baxter, H.H. *Grain Elevators*. Buffalo: Buffalo and Erie County Historical Society, 1980.

Cataract Power and Conduit Company. *Niagara Power*. Buffalo, NY: Cataract Conduit Company, 1906.

Christensen, Peter H. *Buffalo at the Crossroads: The Past, Present, and Future of American Urbanism*. Edited Volume. Ithaca: Cornell University Press, 2020.

Dunn, Edward T. *A History of Railroads in Western New York*. Buffalo: Canisius College Press, 2000.

Gordon, William Reed. *90 Years of Buffalo Railways, 1860-1950, International Railway Company*. Buffalo, New York: Ms. on File. Buffalo and Erie County Public Library, 1990.

Hay, Duncan. *New York State Barge Canal*. National Register of Historic Places nomination form. Washington, DC: National Park Service, May 2020.

Leary, Thomas and Elizabeth C. Sholes. *From Fire to Rust: Business Technology and Work at the Lackawanna Steel Plant, 1899-1983*. Buffalo, 1987.

Leary, T. and E. Scholes. *Industrial Crossroads; Buffalo and the Niagara Frontier: A Guidebook for the Society for Industrial Archeology*. n.p., 1992.

Shaw, Ronald E. *Erie Water West: A History of the Erie Canal, 1792-1854*. Lexington: University Press of Kentucky, 1966.

Schneekloth, L.H. *Reconsidering Concrete Atlantis: Buffalo Grain Elevators*. School of Architecture and Planning, University at Buffalo, The State University of New York. 2006.

Sheriff, Carol. *The Artificial River: The Erie Canal and the Paradox of Progress, 1817-1862*. New York: Hill & Wang, 1996.

Whitford, Noble E., and Minnie M. Beal. *History of the Canal System of the State of New York, Together with Brief Histories of the Canals of the United States and Canada*. Albany: Brandow Printing Company, 1906.

SIA
BUFFALO 2025
TOUR & EVENT SITES

Tour & Event Times

WEDNESDAY, MAY 28

- **SIA Board Meeting | 3:00 - 5:00 PM**

THURSDAY, MAY 29

- **T1 - Explore Buffalo Walking Tour | 2 - 3:30/5 PM**
- **T2 - Forest Lawn & Frank Lloyd Wright Martin House Tour | 11:45 AM - 6 PM**
- **T3 - Hydroelectricity in Canada at Niagara Falls | 8 AM - 6 PM**
- **Welcome Reception at Hyatt Atrium Bar | 6:30 PM**

FRIDAY, MAY 30

- **F1 - Erie Canal Locks and Water Pumping Station | 8 AM - 6:30 PM**
- **F2 - Buffalo's Elmwood Village, West Side, and the Lake Erie Water-front | 8 AM - 4:45 PM**
- **F3 - Industrial Processes and Products, Past and Present | 8 AM - 5:30 PM**
- **F4 - Harnessing the Power of Niagara Falls | 8:10 AM - 5:00 PM**

SATURDAY, MAY 31

- **Paper Sessions | 8:15 AM - 5:20 PM**
- **SB - Saturday Banquet | 6:00 PM**

SUNDAY, JUNE 1

- **S1 - Buffalo Harbor Cruise | 9 AM - Noon**
- **S2 - Explore Buffalo Walking Tour | 9 AM - 10:30 AM/Noon**

Thursday Pre-Conference Tours

T1 - Explore Buffalo Walking Tour

Join Explore Buffalo for a downtown walking tour of the best of Buffalo architecture and history! The buildings included on this overview tour help to tell the story of Buffalo's rapid rise to prominence, from the opening of the Erie Canal to the 1901 Pan-American Exposition. Buildings seen on this tour were designed by both nationally and locally significant architects, including Louis Sullivan, Richard Upjohn, Louise Bethune, and EB Green. Perfect for both visitors and residents alike, this tour is an excellent introduction to Buffalo's architectural heritage. This is an exterior-only tour.



Edward M. Cotter
155 Ohio St.
Buffalo

The Edward M. Cotter fire boat, originally named the William S. Grattan, was built in 1900 by the Crescent Shipyard in Elizabeth Port, New Jersey. It is the oldest active fire boat in the world. Along with its firefighting duties it breaks ice in the Buffalo River and Buffalo harbor. The boat is 118 feet long, 24 feet wide and draws 11 feet draft. The hull is constructed of 1-1/2-inch-thick Swedish steel with extra bracing for ice breaking. Originally, the boat was powered by coal fired boilers with a steam engine.

On July 28, 1928, the Grattan was working as an oil barge when an explosion occurred and set the wooden pilot house on fire. The crew abandoned the ship, leaving the boilers unattended. When the boilers ran dry, they exploded, destroying portions of the ship. The Grattan was overhauled at the Buffalo Dry Dock Company and outfitted with new oil fired boilers, steam engines and an extra turret, which was added to the top of the pilot house.

In the 1950s the boilers and steam engine began to show their age and in 1952, the Grattan sailed to the Sturgeon Bay Shipbuilding Company for an overhaul. The boilers and steam engine were removed and replaced with diesel engines. New pumps were installed, and the wooden superstructure was removed and replaced with a steel one. The single screw was also removed and replaced with twin screws. The boat was renamed the Edward M. Cotter in 1955 after a respected Buffalo firefighter and leader of the local firefighters' union.

On October 7, 1960, the Maple Leaf Milling Company in Port Colborne, Ontario, Canada caught fire. The fire burned for two days, and in response, the Port Colborne Fire Department called Buffalo to request assistance from the Cotter. The trip from Buffalo to Port Colborne takes two hours, and it took nearly four hours to bring the fire under control. This is the first time a United States' fire boat crossed an international border to assist another fire department.

The Cotter now has a total of 6 engines: two 4-cylinder Caterpillar engines at the stern, each operating a 50 kw generator for electrical power. Forward of the generators are two Caterpillar 12-cylinder engines for propulsion, and forward of the propulsion engines are two identical engines for pumping.

T2 - Forest Lawn Cemetery / Frank Lloyd Wright's Martin House



FOREST LAWN CEMETERY
1900 Main St.
Buffalo

Established in 1849, Forest Lawn stands as one of America's first purposefully designed rural cemeteries, encompassing 269 acres of resting space for nearly 170,000 permanent residents of all faiths. After the completion of the Erie Canal, Buffalo had become one of the busiest ports in the world. Buffalo lawyer Charles E. Clark realized the need for a substantial cemetery to serve the city's booming population. Clark purchased the land and followed a model created by Frenchman Père-Lachais, who in 1804, had created a cemetery in Paris that attempted to balance urbanism with a rural setting. The first cemetery in the United States to follow this model was Mount Auburn in Cambridge, Massachusetts (est. 1831). Clark's goal was to combine natural and artificial art, allowing civilization to be present without disturbing the romantic environmental setting. The land he purchased, with its rolling hills and spring-fed lakes, was the perfect setting for his vision.

Forest Lawn is a non-profit landmark, listed on the State and National Registries of Historic Places, and is a pivotal part of Western New York's cultural tourism. Visitors are drawn to its exquisite natural beauty, as well as its artistic treasures, including the Frank Lloyd Wright-designed Blue Sky Mausoleum. Forest Lawn also serves as the community as a public park and arboretum, with 3,500 trees representing over 100 unique varieties. The cemetery routinely attracts ornithophiles, as the cemetery is home to hundreds of bird species well.

Forest Lawn's history is as rich as its landscape, with notable figures such as a U.S. President, foreign royalty, veterans from every American conflict since the Revolutionary War, and ordinary people who have quietly built the community that we and our families enjoy. Their stories are preserved in the expansive archives of the Margaret L. Wendt Archive and Resource Center and brought to life through award-winning tours and events. Some of the gravesites that have become particularly popular with visitors are former President Millard Fillmore, funk musician Rick James, and the first professional female architect Louise Blanchard Bethune.



FRANK LLOYD WRIGHT'S MARTIN HOUSE
125 Jewett Parkway
Buffalo

Built between 1903 and 1905, the Martin House was designed by acclaimed American architect Frank Lloyd Wright as the city home for Buffalo business executive Darwin D. Martin and his family. The Martin House is characterized by its spatial openness, horizontal planes, pier and cantilever construction, and palette of natural colors and materials. It is considered one of the great achievements of Wright's career, resulting from a remarkable partnership between client and architect.

Darwin D. Martin was an accomplished business leader in the city of Buffalo. A self-made millionaire, he was a top executive for the Larkin Company—a rapidly expanding soap and mail-order operation. Tasked with finding an architect to design the firm's new administrative headquarters, Martin's attention was drawn to Wright whose works and reputation at the time were limited to Illinois and his native Wisconsin. Martin was also interested in having a new home built for his wife Isabelle and their family. In the end, Martin was

pivotal in engaging Wright for both projects—two of the most important commissions of the architect’s early career.

Frank Lloyd Wright is internationally recognized as one of the most important figures in 20th century architecture and design. His legacy is marked by his vision to create a new form of architecture based on the open landscape of the American Midwest. Wright redefined traditional concepts of structure and space by connecting the built environment to the natural world. He is best known for his Prairie style homes, efficient office buildings, innovative furniture, and decorative designs.

Described by Wright as a “domestic symphony,” the Martin House is a comprehensive residential estate.

The property includes the main dwelling, a secondary house, a gardener’s cottage, and a series of interconnected buildings woven together within an integrated landscape. Art glass, furnishings, and other creative design elements—all conceived by Wright—give rise to a bold new vision of the home as a total work of art.

The Martin House did not fare well over the years. It was abandoned, partially demolished, and neglected in the period following Martins’ life there. With the resolve of many, an ambitious restoration effort to save this treasure began in earnest in 1992 and was completed in 2019. Today, Martin House stands as a compelling symbol of civic identity and cultural pride. It is a National Historic Landmark and a premier heritage destination within New York State’s network of historic sites.

T3 - Hydroelectricity at Niagara Falls



ADAMS POWER PLANT (POWERHOUSE NO. 1)
1501 Buffalo Ave
Niagara Falls

By the late 19th century, the then-novel concept of widespread electrical power for Americans seemed out of reach. Buffalo's close proximity to Niagara Falls however, made the seemingly impossible, a reality. Following a plan created by engineer Thomas Evershed, the Cataract Construction Company led by Edward Dean Adams was tasked with creating a power generation station to harness the power of the nearby world wonder. To alleviate the problem of transmitting electricity over long distances, the proposed Adams Power Station would serve as the central plant.

The power plant received financial backing from men like John Jacob Astor, W.K. Vanderbilt, and J.P. Morgan. In early 1895, construction began with the support of Westinghouse Electric, which was subcontracted to build 5,000 horsepower alternating-current generators. The building was designed by architecture firm McKim, Mead and White, and locally sourced limestone was used as the main building material.

Powerhouse No. 1 (as it was called then) delivered its first power to the city of Buffalo on November 15th, 1896. Using a 26-mile AC line, Buffalo became the first city to have widespread electrical power. For the next sixty years, the Adams Power Plant served as the main provider of electricity in the area until they were put on "standby" in 1926, before finally being decommissioned after the construction of the Robert Moses Plant in 1961.

The Adams Station suffered the same fate as many landmark innovations: it was initially successful and quickly outmoded. By the time

the plant went on standby in 1921. Its 110,000 hp capacity was being dwarfed by continued incremental improvements such as the three Allis-Chalmers units then being readied for installation in Schoellkopf Station 3-C. Each was designed for 70,000 hp and 65,000 kva at 107 rpm under 213' head. Devoid of original equipment, The Adams Station Transformer House is now distinguished chiefly by its architectural lineage.



SCHOELLKOPF POWER STATION
Niagara Falls State Park
Niagara Falls, NY

Jacob F. Schoellkopf was born in current-day Germany and travelled to the United States at 22 years old in 1841 with hopes of striking it rich. With money provided by his father, Schoellkopf started a tannery in Buffalo and was soon successful enough to purchase neighboring tanneries. In 1857, he began investing in local mills. Inspired by this new influx of wealth, Schoellkopf took note of the business potential of nearby Niagara Falls. The advent of electricity promised fortunes for those with the foresight to invest. In 1877, he purchased the Niagara Falls Canal Company, planning to use the canal to generate electrical power for the nearby cities of Niagara Falls and Buffalo.

Direct current electricity for local consumption was generated as early as 1881 by Jacob F. Schoellkopf's newly established Niagara Falls Hydraulic Power and Manufacturing Company. From 1905 to 1924, a series of three plants were built at the base of the falls, the entire operation constituted the largest hydroelectric power station in the world. At the top of the falls were offices, gatehouses, and other buildings that assisted the operation. At its peak, the Schoellkopf Power Station generated close to 450,000 horsepower, enough to power tens of thousands of homes.

The plant successfully operated at Niagara Falls for over 30 years, until 1956, when a catastrophic accident destroyed the facility. On June 7th, the rear wall of the plant became compromised and began to fill with water. Workers did their best to patch the leak with sandbags, but to no avail. At 5pm, the wall gave way and the majority of the station collapsed into water. One worker was killed in the incident and the damage was estimated at close to \$100 million dollars. Today, the site houses the boats from the popular Maid of the Mist attraction that tours Niagara Falls.



TORONTO POWER PLANT
231 Queens Quay W
Niagara Falls, Ontario

Construction on a hydroelectric power plant to address the need for electric power in the Canadian Province of Ontario began in 1903. Completed in 1906 in the Beaux-Arts-style, the station was designed by architect E. J. Lennox for the Electrical Development Company of Ontario to supply hydroelectric power to Toronto. The Electrical Development Company (EDC), later known as the Toronto Power Company, began generating power in November of 1906 through the Toronto Power Generating Station. This power plant has an outlet tunnel, that runs about a third of a mile under and out into the Falls. At its time of use, it was the largest of its kind in the world. The plant is built on top of a deep wheel pit, with turbines at the bottom of the pit, turning generators at the top by means of long vertical shafts. The water from the turbines runs out through a brick-lined tailrace which eventually comes out at the base of the falls. In its prime, it had a generating capacity of 137,500 horsepower.

Hydro-electric power first reached Toronto from this station on November 19, 1906, about ten years after it first reached Buffalo, and was flowing to Toronto Electric Light Company customers two days later. This made the plant the first Canadian-owned hydroelectric facility at Niagara Falls.

The station was retired from service in 1974, as production shifted to make better use of available water downriver at the Sir Adam Beck Hydroelectric Power Stations in Queenston. It was designated a National Historic Site of Canada in 1983. Renovations are currently underway to transform the historic station into a luxury hotel, scheduled to open in 2027.



THE PEACE BRIDGE
1 Peace Bridge
Buffalo/Erie, ON

Construction on the Peace Bridge, which links the United States and Canada began in 1925, and was completed in 1927. Designed by Edward P. Lupfer, it has five steel arches 347 to 424 feet in length plus a bow-truss section that spans the Black Rock ship canal. At its highest point, the deck rises 100 feet over the Niagara River. Abutment to abutment the Peace Bridge is approximately 3600 feet long. During construction 3,500 feet of steelwork and 9,000 tons of structural steel was used. The bridge received its name after completion to commemorate 100 years of peace between the United States and Canada.

During the opening ceremony on August 7th, 1927, close to 20,000 people attended the festivities. The ceremony was broadcast over radio, with millions of listeners tuning in to learn more about the new link between their two countries. Today, the Peace Bridge is one of the busiest international crossings in the world, with over 5 million vehicles driving across every year.

Friday Conference Tours

F1 - Erie Canal Locks and Water Pumping Station

This tour provides an in-depth look at the industrial interventions that historically shaped the waterways in Buffalo and Lockport, particularly the Erie Canal. The tour will begin in Lockport at the **GM Lockport Components** facility, where visitors will go on a guided process tour of the active automobile manufacturing site. A narrated drive through the town of Lockport will follow, providing insight into the growth of the town and its industrial sector owing to the presence of the Erie Canal since 1825. Lunch will occur before we join a guided ride on the **Lockport Locks and Erie Canal Cruise**, which will demonstrate the way the locks function up close, as well as pass bridges and industrial sites. Returning to Buffalo, the tour will have a guided tour inside the **Colonel Ward Pumping Station**. Built in 1907 to provide water to the city from Lake Erie, the centerpiece of the original design were five, six-story steam pumps, designed and built by Holly Manufacturing in Lockport. They still sit there, dwarfing the modern electric pumps. This facility is almost never open to the public, as it is still in operation, providing a rare opportunity to see one of the nation's most stunning historic water station buildings with original equipment. We will finish the day with an in-depth walking tour of the **Erie Canal Terminus** and its history, in recognition of the 200th anniversary.

1910 by Herbert C. Harrison, who invented the "Harrison Hexagon" honeycomb radiator. The company was sold to William C. Durant, founder of General Motors in 1916; however, Harrison continued to be the president of Harrison Radiator until 1927. Heat dissipating equipment such as radiators, oil coolers, intercoolers, and other types of heat exchanges produced by Harrison were used extensively during the first and second World Wars to cool engine oil and coolants for combat aircraft, including the Curtiss JN-4 "Jenny."

In 1939 Harrison Radiator constructed a 350-acre, 10-building manufacturing facility on Upper Mountain Road. Harrison Radiator constructed automobile radiators and air conditioners for GM at both facilities. At its peak, Harrison Radiator Company produced 2.3 million radiators and had over 10,000 employees. The Washburn Street facility closed in 1987, GM allocated Harrison Radiator to Delphi Automotive Systems and renamed the company Delphi Harrison Thermal Systems in 1995. Harrison Radiator was reacquired by GM as part of its Automotive Components Group in 2009 and continues to manufacture automotive heating and cooling components. The company currently employs close to 1600 people in its 2.6 million square foot Lockport facility.



GENERAL MOTORS COMPONENTS – LOCKPORT OPERATIONS
200 Upper Mountain Road
Lockport, New York

The General Motors (GM) Lockport Operations, formerly Harrison Radiator Company, was founded in



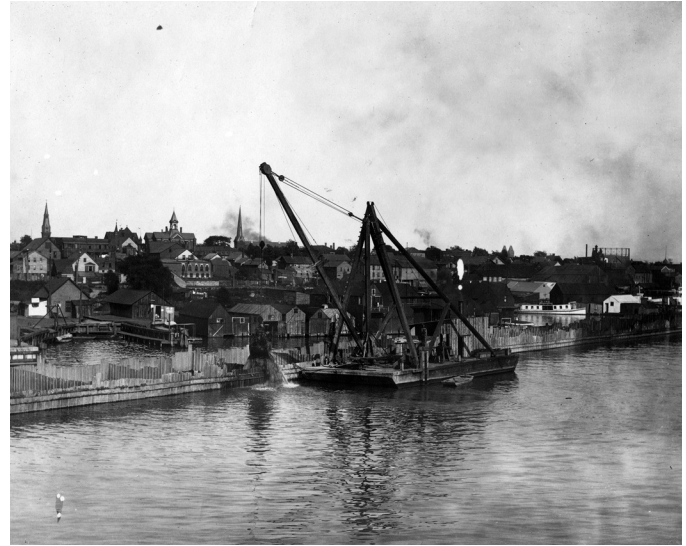
ERIE CANAL LOCKS 67 - 71
Pine St.
Lockport

The 60+ foot cliff of the Niagara Escarpment presented a major engineering problem during construction of the original Erie Canal (1817-1825). The

puzzle was solved by engineer Nathan S. Roberts who designed a double flight of five locks for ascending and descending traffic. His design helped create the focal point for the city of Lockport. Each lock measured 90' x 15' with a lift of 12'. An original drawing of the Roberts twin flight survives and is in the possession of the Lockport Public Library; however, the locks themselves have been replaced by an updated construction.

The first enlargement of the Erie Canal was carried out between 1836 and 1862. It expanded the canal prism from 40' x 28' x 4' to 70' x 52 1/2' or 56' x 7' and the lock dimensions to 110' x 18'. The maximum tonnage of canal boats it could accommodate thereby increased threefold. The extant Northern Tier consists of five combined locks, #67-71, built of limestone ashlar. These locks were completed in 1842, just as the Stop Law called a four-year halt to state canal construction to alleviate debts incurred from its construction. Thomas Evershed, who later attempted to harness the power of Niagara Falls, worked on this project as a young engineer. The locks in the northern flight were not lengthened during upgrades made to the canal between 1884-1890. Their combined lift during that era was 54.16'.

The Erie Barge Canal project of 1909-1918 resulted in the replacement of the southern flight by two concrete, electrically-operated locks, 310' x 45' x 12' with a combined lift of 49'. The early 20th-century design was inspired to some extent by the engineering of the Ymuiden locks on the North Sea Canal. The Barge Canal locks' gate and valve operations are powered by vintage GE 7hp motors. The miter gates of the Northern Tier have been removed, and the flight now functions as a spillway around Locks #34-35. Two of the stone arch footbridges that once spanned the chambers remain in place.



BLACKROCK HISTORIC DISTRICT **Niagara Street** **Buffalo**

Located in Buffalo's West Side, the Black Rock Historic District is composed of a collection of intact buildings that were once factories, storefronts, and private residences along Niagara Street. The area was a center for industry and transportation, and made use of the extensive waterways and rail lines that once existed there. The period of significance for Blackrock started with the construction of the Union Meeting Hall in 1827 and concluded in the 1960s when the last manufacturing companies relocated to different parts of the city.

During the 1800s, Blackrock and Niagara Street comprised a center for shipbuilding. Numerous ships were built in Blackrock for the War of 1812. The first prominent citizen from the area was Major General Peter Porter, the first United States Congressman from Buffalo. Porter served at Secretary of War under Andrew Jackson and pushed for the Erie Canal terminus to be located in Blackrock. Although his attempts were unsuccessful, when the canal was completed in 1825, it caused an economic boom.

By the late 1800s, however, transportation via the Erie Canal was steadily being replaced by rail lines spreading across New York State. In 1883, the New York Central Railroad constructed a rail network across Buffalo. Known as the Belt Line, it spurred on another period of growth in Blackrock until the rail line's closure just over 30 years later.

Some notable companies that called Blackrock their home at the turn of the 20th century were the Buffalo Gasoline Motor Company, the Sterling Engine Company, the American Body Company, and Sowers Manufacturing. During the second half of the

20th century, a major exodus from the city, coupled with the construction of interstate highways, contributed to a steep population decline along Niagara Street. Today, revitalization is taking place in the form of new restaurants, bars, residences, and small business popping up along this historic street.



Colonel Ward Pumping Station
Porter Avenue
Buffalo

The City of Buffalo began construction in 1907 on a new intake and tunnel for a pumping station to supplement the existing facility on Massachusetts Ave. The Buffalo Dredging Co. completed the intake project in 1913. The new intake lay in the "Emerald Channel", the clearest portion of the Niagara River. Twelve ports in a circular brick and steel housing admitted water through sluice gates. The intake itself consisted of 3/4" steel plates, riveted into two concentric rings with concrete infilling. A concrete-lined tunnel, 11'3" x 12', ran 6651' to the new pumping station at the foot of Porter Ave. and then on to the Massachusetts Ave. station.

Work on the new pumping station began in 1909; but the collapse of the roof trusses in 1911 became a political scandal, and so completion was delayed until 1916. Designed by the local firm of August Carl Eisenwein and James A. Johnson, the building consists of brick curtain walls over a steel frame with reinforced concrete floors and roof, the roof was initially covered by Ludowici-Celini tiles, and the ornamentation included terra-cotta trim. The structure was named after the then-Commissioner of Public Works.

As of 1916, intake water was channeled directly into the pumping station via two subterranean canals that forked around the central boiler house wing. River water was chlorinated at the intake but was not oth-

erwise treated. In 1924, a rapid mechanical sand filtration system was installed in buildings adjacent to the pumping station. A raw water conduit from the intake tunnel led to a head house and low-lift pumping station. The lowlift duty was eventually handled by a total of five Dayton-Dowd electric centrifugal pumps; their capacities ranged from 750,000 to 45,000,000 gallons per day. The filtration units installed in 1924 were rated at 240 mgd. They did not occupy all of the filter gallery, and the remaining space was used as a clear water reservoir. An underground reservoir extension was constructed in 1936. The filtration plant also included a coagulating basin from which treated water passed through Venturi meters and then to the pumping station via a filtered water conduit.

The 1916 pumping station consists of an engine room and three perpendicular wings. The central wing originally contained eight Babcock & Wilcox 750 hp sectional water-tube boilers. These units were replaced in 1952. Six of the successors were removed in 1963 and the remaining two converted to gas-firing for steam heat. The two 250' chimneys that flanked the boiler house are no longer extant. The north wing contains offices and storage. Located in the south wing are the machine, pipe and meter shops.

Five additional pumps were installed in 1915. Carrying the nameplate of the former Holly Works in Lockport, they were manufactured at the Snow Steam Pumps plant on Buffalo's East Side. The vertical triple-expansion engines have cylinder dimensions of 31" & 64" & 98" x 66". Each engine had a capacity of 30 mgd and was rated at 1200 hp. Including two 20' flywheels, the approximate weight of each unit is 1100 tons. These engines have not operated regularly since boiler capacity was cut back. The station's high-lift duty is now carried by three 50 mgd DeLaval horizontal centrifugal pumps driven by 2500 hp General Electric motors; these units were installed in 1938. At the time of its completion Col. Ward Station's 150 mgd capacity made it the largest municipal pumping plant in the United States.



INNER HARBOR LIGHTHOUSE

**1 Fuhrmann Boulevard
Buffalo Lighthouse**

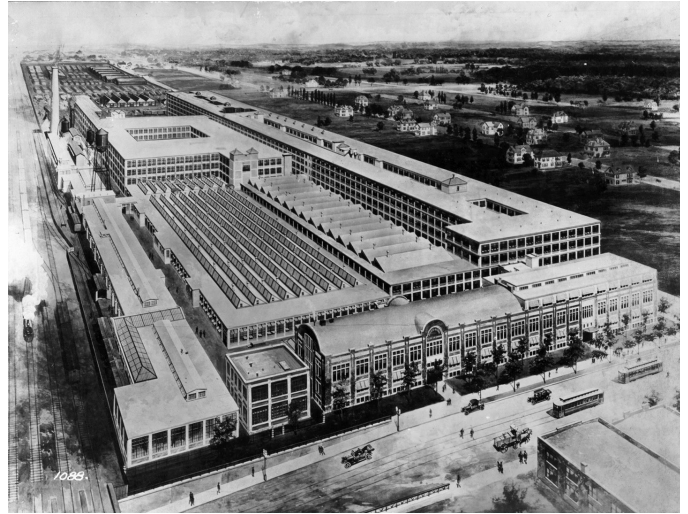
Built in 1833, this octagonal lighthouse is the oldest structure in Buffalo still located on its original foundation. It replaced the earliest local harbor improvement, the lighthouse of 1818. When first constructed, the lower stone portion of the tower was 44' high, 20' in diameter at its base tapering to 12' at the top, built of smooth-faced limestone ashlar. A surmounting course of stone casement windows along with a two-story metal lantern were added in 1856. This addition occurred when the illuminating apparatus was upgraded to a third-order fixed white beacon. In 1905, the fixed lens was replaced by a four-panel lens that flashes white every six seconds. The pierhead light then went dark in 1914 when the third-order Fresnel lens was moved out to the Old Breakwater.

Even darker days seemed in store for this historic symbol of maritime prominence when, in 1958, the Army Corps of Engineers announced plans to widen the mouth of the river and demolish the lighthouse in the process. The threat of demolition galvanized a public campaign to preserve this utilitarian structure; the effort went well beyond any defense mounted on behalf of Wright's Larkin Administration Building a decade earlier and it was successful. By 1961, restoration of the 1833 light was undertaken with the Buffalo & Erie County Historical Society (now Buffalo History Museum) as the lead agency. A second noteworthy grass-roots preservation program began in 1985 when the Buffalo Lighthouse Association was formed to stabilize the structure and enhance access to it. This organization has installed a replacement lens and placed interpretive signage along a trail through the Coast Guard base.

The 1833 light commands the head of the South Pier, a much extended and expanded descendant of the timber structure cobbled together by Samuel Wilkeson and others in 1820 as part of a plan for scouring the sand bar that obstructed the mouth of the river. Wilkeson's success with this privately funded navigation improvement marked the beginning of Buffalo harbor and the city that sprang from it. Local nineteenth-century patriarchs grew accustomed to the constant maritime parade and the wealth it brought to their doorsteps. The stone lighthouse that once guided vessels to Wilkeson's harbor now shares the South Pier with a steel-plated "bottle light", which was transplanted from the North Breakwater where it stood from 1903 until 1985. Today, Buffalonians routinely visit the city's recently refreshed waterfront, where the old lighthouse stands as a remainder of the prominence of shipping on the Great Lakes decades earlier.

F2 - Buffalo's Elmwood Village, West Side, and the Lake Erie Waterfront

This tour brings guests to two of Buffalo's most notable neighborhoods, the Elmwood Village and the West Side. The tour's first stop is the former **Pierce-Arrow Motor Car Factory Building** on Elmwood Avenue. Here guests can learn about a local company that produced some of the most coveted automobiles in the world, as Buffalo-made Pierce-Arrows were the first White House car. Just across the street we will visit **Hadley Exhibits** for a robust process tour. Learn more about the inner-workings of museums from one of the United States's premier exhibit production and fabrication companies. For over 100 years, they have created state-of-the-art guest experiences at institutions such as the National September 11 Memorial Museum, American Museum of Natural History, and the National Museum of the Native American. Now mostly a vacant strip, gain insight into Buffalo's rich industrial history with a quick visit to **Chandler Street**. Learn about the former companies that once existed here like the Jewett Refrigerator Company, the Double Truss Cornice Brake Factory, Linde Air Products, and more. Check out how some of Buffalo's products made their way across international borders to Canada with a stop at the **International Pivot Bridge**. After lunch, **Great Lakes Pressed Steel** will tour us through their facility and explain how they have continued Buffalo's involvement with the steel industry into the 21st century. Visitors will then travel to the waterfront to learn about how the city was once one of the largest grain producers in the country with a stop at the **Ohio Street Bridge**. The bridge was once used to connect Silo City with Buffalo's historic First Ward neighborhoods. The last stop on this tour brings us to **Rigidized Metals**, a leader in engineered metal surfaces and panels, and one of the city's largest manufacturers today.



PIERCE-ARROW MOTOR CAR
1685-1695 Elmwood Ave.
Buffalo

George N. Pierce branched out from the manufacture of bird cages through the bicycle craze at the end of the 19th century and into automobile production. In contrast to Henry Ford and his assembly line, Pierce-Arrow Motor Car focused on smaller production runs, artisan detailing, and handmade automobiles. Their high-end luxury automobiles were on par with the finest brands from around the world, placing them in the same category as Rolls-Royce, Bugatti, and Cadillac/LaSalle. In 1909, President William Taft gave Pierce-Arrow the distinction of supplying the first White House car after ordering two for himself and his family.

After success with their first two models, the Motorette and Arrow, the company realized the need for expansion. In 1906-1907, Pierce-Arrow completed the design for a complex centralizing the operations involved in producing the Great Arrow car. The property, part of the recent Pan-American Exposition's grounds, originally covered 15 acres. Seven major buildings were put up during the first phase of construction, and they remain standing among the 14 structures now on the site. Lockwood, Greene & Co. held the prime contract with Albert Kahn, who had recently completed the Packard factory, as associate architect. However, the large areas of glazing that distinguished this and other pre-WWI daylight factories have largely been filled in. Nevertheless, the Pierce Arrow works remains a significant example of both reinforced concrete construction and early automotive plant design that has endured

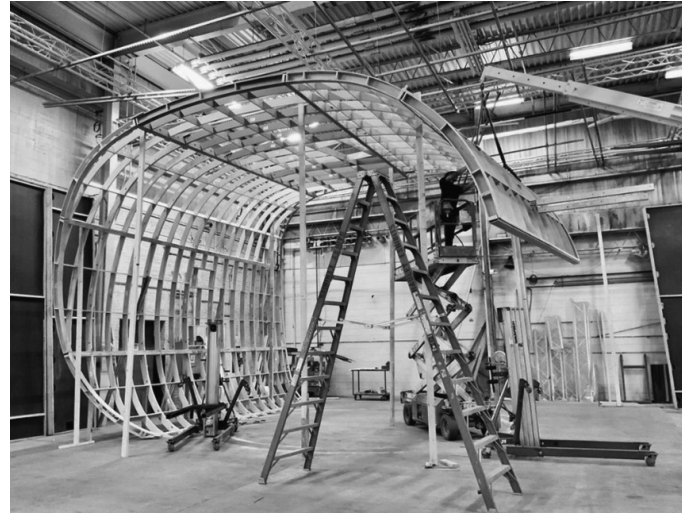
longer than the founding company, which eventually expired in 1938. A multitude of commercial and light industrial businesses now occupy the site.

Of the two buildings fronting Elmwood Ave., the original three-story Administration Building, 252' x 70', with its characteristic barrel-arch roof was designed by George Cary, who abandoned the neoclassical vocabulary of his Beaux Arts training so evident at his 1901 New York State Building for the Pan-Am Expo. (now the Buffalo History Museum); the three-story addition to the south dates from 1910. The real Pierce-Arrow factory, however, lies behind this public facade. Production methods were initially predicated on precision machining and static assembly. The Manufacturing Building had one story with a sawtooth roof; it housed belt-driven machine tools for small parts work.

Fabrication of the composite body took place in a U-shaped building, 160' wide; the south wing, fronting on Great Arrow Ave., was originally 401' long and the north wing measured 327'. All sections of the Body Building were at first two stories high, and they have subsequently been raised and extended to form the current vista. Components from machining operations and the body shop merged in the Assembly Building, situated between the other two areas; this structure was also a single story with a sawtooth roof and dimensions of 402' x 122'. (This mixture of one-floor and multi-story structures was evident at Ford's Highland Park plant, also designed by Albert Kahn and opened in 1910.) Other Pierce-Arrow buildings completed during the 1906-1907 phase of construction were the Brazing Building, Power House and Garage, all aligned on the New York Central Belt Line.

The Pierce-Arrow factory demonstrated some of the virtues of reinforced concrete when applied to the construction of large industrial structures: its seven original buildings were ready for occupancy in a little over six months. According to the Engineering Record, this span represented a significant saving of time over methods involving load-bearing masonry or steel-frame fabrication. However, as an industrial design the complex antedated the assembly line, and later engineers faced a constant struggle with the layout in attempting to rationalize production methods.

The factory served as the company's base of operations until 1938, the same year that Pierce-Arrow dissolved after an unsuccessful partnership with fellow automaker Studebaker. Throughout the years, the factory building was used by a variety of companies, and in 1974, it was added to the National Register of Historic Places. Today, the facility is a mixed-use building rented by numerous organizations.



HADLEY EXHIBITS **1700 Elmwood Avenue** **Buffalo**

Hadley Exhibits Inc. began its journey in Buffalo, New York, in 1923, when it was founded by Norman F. Hadley, a skilled cabinetmaker and craftsman with a passion for quality woodworking and fine detailing. Originally established as the Hadley Display Company, the business focused on creating custom wood fixtures, display cases, and interiors for department stores and commercial spaces during the golden age of retail merchandising. These early years reflected a high demand for precision craftsmanship, and Hadley quickly earned a reputation for quality and reliability.

As the 20th century progressed, Hadley Display expanded its offerings in response to the booming retail industry. The company's skilled artisans built ornate and functional store displays, fixtures, and cabinetry for major department stores throughout the United States. Their expertise in millwork and detailing allowed them to stand out in a competitive market, and their Buffalo workshop became known for its blend of old-world craftsmanship and adaptability to new materials and techniques.

In the mid-20th century, Hadley experienced a significant transformation. As consumer trends shifted and department store interiors became more standardized and mass-produced, the company pivoted toward a growing niche: museum exhibit fabrication. This transition aligned perfectly with Hadley's core strengths—custom fabrication, attention to detail, and a deep understanding of how to build environments that convey narrative and engage the public.

By the 1960s and 1970s, Hadley Exhibits had become a sought-after partner for museums across the United States. The company expanded its capa-

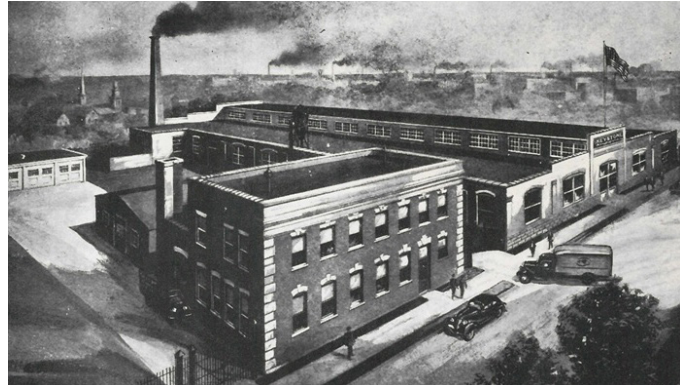
bilities to include interactive exhibits, scenic reproductions, custom mount-making, and object case-work, evolving from a traditional fabrication shop to a comprehensive exhibit design and production firm.

Throughout the 1980s and 1990s, Hadley Exhibits embraced new technologies and methods in exhibit production. The company integrated computer-aided design (CAD) software, computer-controlled machining, digital media, and interactive electronics, staying ahead of the curve while maintaining the handcrafted quality that defined its early work. It also began to expand its geographic footprint, working with museums across North America and beyond.

Hadley developed in-house teams of designers, project managers, craftsmen, and installation crews, allowing for seamless execution from concept to completion. This integration of design and fabrication under one roof allowed for greater control over quality, cost, and timeline—something that became a hallmark of the Hadley experience.

In the 21st century, Hadley Exhibits Inc. has grown into an internationally recognized leader in the museum and interpretive exhibit industry. Hadley's projects have spanned from Smithsonian-affiliated institutions to Olympic museums, aquariums, and historic sites. Each project is tailored to specific narrative and audience needs. The company has created immersive, educational, and impactful environments for major institutions including natural history museums, science centers, history museums, cultural heritage centers, visitor centers, and branded environments in North America, Europe, Asia, and the Middle East.

Now more than 100 years since its founding, Hadley Exhibits continues to evolve. The company combines cutting-edge technology with timeless craftsmanship, working closely with curators, designers, educators, and architects to create spaces that educate, inspire, and engage. Hadley has embraced sustainability, inclusivity, and community engagement as essential values in its work, ensuring that its exhibits not only tell stories but do so responsibly and meaningfully. Still privately owned, Hadley Exhibits Inc. is one of the longest-standing exhibit companies in the world—a rare legacy in a constantly changing industry.



CHANDLER STREET HISTORIC INDUSTRIAL BUILDINGS

Chandler Street Buffalo

Chandler Street is a small historic district that remains as an example of Buffalo's manufacturing and industrial history. Located in the Grant-Amherst neighborhood, the site sits just a few miles north of downtown. The location served as a small industrial corridor, built adjacent to the New York Central Belt Line. At the height of its prominence, the area was densely populated by numerous companies and factories, such as the Jewett Refrigerator Company Factory at 27 Chandler Street (1902), the Double Truss Cornice Brake Factory at 37 Chandler Street (1902) and the Keystone Manufacturing Company Building at 41-63 Chandler Street (1903).

The Jewett Refrigerator Company Factory was a three-story, red brick rectangular building. The entrance is at grade, and is located in the westernmost bay. In total, there were 15 bay entrances on the building. Between 1940 and 1943, a series of single-story additions were added to the rear of the building that have since been demolished.

The Double Truss Cornice Brake Company was founded in 1893 by John Hooper Crocker. Their factory on Chandler Street was a two-story, L-shaped brick building. A second story and additional bays were added in 1947 in a visibly different shade of red brick, differentiating it from the original factory building. The company specialized in sheet metal machinery, with a specific focus on cornice brakes and gutter formers.

Right down the street was the Keystone Manufacturing Company Building. Founded around 1891, the company produced tools such as wrenches, sockets, and drills. Their factory building on Chandler Street was built in 1903, with a series of two additions taking place in 1911 and 1979. The 1979 addition was the most sizable, and unlike the red brick used in the initial construction, it used concrete block.

These companies and the resulting changes to Chandler Street illustrated the rapid industrialization that took place in the Grant-Amherst neighborhood at the turn of the 20th century. An area that was once mostly farmland, was transformed into a manufacturing epicenter over the course of about 30 years. When Buffalo's economy started to falter in the early 1960s, many of the Chandler Street companies either closed or relocated. Today, the area serves as a critical present-day link back to the city's impressive manufacturing history. New businesses and restaurants have storefronts on Chandler as it continues its adaptive reuse plan.



GREAT LAKES PRESSED STEEL
1400 Niagara Street
Buffalo

The Great Lakes Pressed Steel Company was formed in 1918, which was an outgrowth of the Eagle Stamping Company, established in 1905. The company was founded by Gottfried Adolphos, who emigrated to the United States in 1890. In 1905 he moved to Buffalo, New York where he, along with four partners founded Eagle Stamping Company at 369-371 7th Street. In 1918 he bought out his partners, changed the companies name to Great Lakes Pressed Steel Company and relocated it to its current home at 1400 Niagara Street.

The company sold to the local jobbing trade, and had a large export trade. In 1923 the company had one-hundred-and-fifty employees. Following his death in 1960, Adolphos's son-in-law Robert M. Nichols became President of the company. The company has remained family owned since its founding. Following Robert M. Nichols death in 1971, his son Robert Junior became President and CEO. Tim Nichols, Robert Junior's son has pre-

sided over the company since 1998. Tim's sons Jason and Andrew, both graduates of the Rochester Institute of Technology continue the tradition of the family-owned company.

The descendants of Adolphos have retained much of the historic metal manufacturing machinery on the upper floor of the plant. The company provides precision stamped products and metal forming to meet the needs of a wide range of industries including electrical applications, the heat transfer industry, and electric motor applications for medical, military, construction, and marine industries.

MILLIONAIRE'S ROW

Delaware Avenue between North Street and Bryant Avenue
Buffalo

During the second half of the 19th century, the City of Buffalo experienced unprecedented growth owing to its extensive manufacturing, location along the Erie Canal, and proximity to national railway lines. With this growth came an influx of wealth and the creation of preeminent architecture across the city from the 1860s to early 1900s. At the turn of the 20th century, Buffalo was the eighth largest city by population in the United States and was home to the most millionaires in North America. Many of these prestigious businessmen and industrial tycoons settled in or built mansions along Delaware Avenue. Charles W. Goodyear, William Gratwick, and Grace Knox were among the noted Buffalonians who constructed residences there. Today, the rows of striking, architecturally significant mansions provides a glimpse into Buffalo's status as one of the most important American cities of the late 19th and early 20th century.



OLMSTED PARK SYSTEM Buffalo

As Buffalo grew and became one of the nation's most important cities during the latter half of the 19th century, civic leaders looked to emulate what other influential cities across the world were doing. To reflect international greenspace trends in metropolitan areas, Buffalo looked to create a park system that could rival any in the United States. To lead the project, the city employed the services of Frederick Law Olmsted, the premier landscape architect of the time. Olmsted travelled to Buffalo in 1868 and began planning a series of parks across the city. With his partner and mentor Calvert Vaux, the duo developed plans for both the Delaware Park-Front Park System and the Cazenovia Park-South Park System.

The plans included a series of interconnected parks, waterways, and walking trails. Olmsted looked to the park system in Paris for inspiration and by the time his work in Western New York was completed, he called Buffalo "...the best planned city, as to its streets, public places, and grounds, in the United States, if not in the world." Outside of his work on the park system, Olmsted also created the plans for the grounds of the Buffalo State Asylum for the Insane (Richardson Olmsted Campus) in 1869. Olmsted's parks continue to be used extensively by Buffalonians, and the Olmsted Park Conservancy acts as the steward and caretaker of the historic park system.



THEODORE ROOSEVELT INAUGURAL SITE / WILCOX MANSION 641 Delaware Avenue Buffalo

Tensions between British-controlled Canada and the fledgling United States during the period after the War of 1812 motivated the City of Buffalo to build a set of barracks to provide protection for its citizens in case of war. In 1839, a small military barracks was constructed on Delaware Ave. The barracks were home to President Zachary Taylor's daughter and son-in-law, who was a physician there. Five years later, the post was disbanded and the structure was converted into a private residence. In 1883, local businessman Dexter Rumsey purchased the home for his son-in-law, lawyer Ansley Wilcox. Local architect George Cary was commissioned to remodel the home, giving it the appearance it has today. The Wilcox family lived in the home from 1884 until their deaths in the 1930s.

Buffalo's prominence at the turn of the 20th century made it the natural choice for the site of the 1901 Pan-American Exposition, which was similar to Chicago's 1893 Columbian Exposition. A celebration of art, scientific achievement, architecture, and new inventions, the prevailing theme at the Pan-Am was that other countries in the Western Hemisphere should strive to emulate the success of the United States.

Over the course of two years, 90 semi-permanent buildings were constructed across what is today Delaware Park. Buffalo's proximity to Niagara Falls also made it the perfect choice for the exposition, as the recent introduction of hydroelectric power plants at the Falls afforded the city widespread electricity for the first time. With over 200,000 lightbulbs adorning the Pan-American Exposition grounds, Buffalo became known as the City of Light.

On May 1st, 1901, the Pan-American Exposition opened its doors for the first time. With Buffalo being a major railway hub during this period (90% of American citizens could reach Buffalo in one day by train), city leaders anticipated 15 million visitors over the course of eight months. The popularity of the Pan-Am reached a fever pitch over the summer months, and President William McKinley decided to visit the fair in the fall.

On September 6th, 1901, while greeting supporters at the Temple of Music (concert and speaking venue at the Pan-Am), President McKinley was shot by anarchist Leon Czolgosz. McKinley was rushed to the Pan-Am Hospital. Pan-Am leaders first tried to employ the help of renowned doctor Roswell Park. Unfortunately, he was unavailable, and a local doctor who specialized in gynecology took his place. Not all of the bullet fragments in McKinley were found, but it appeared as though the president was going to make a full recovery. After surgery he was taken to the home of John Milburn, the president of the Pan-American Exposition, to recover.

With the outlook looking favorable and, in an attempt to calm the public, Vice-President Theodore Roosevelt was instructed to remain in the Adirondacks where he was hiking and giving speeches at local wildlife clubs. McKinley's wound, however, became infected and his condition worsened. On September 14th at 2:15am, the president succumbed to his injuries. Theodore Roosevelt made an overnight journey across New York State to Buffalo where he was greeted by his friend, Ansley Wilcox. Roosevelt decided to stay at the Wilcox home and was inaugurated as the 26th President of the United States in the Wilcox's library. This event is only one of four instances where a president has been inaugurated outside of Washington, D.C.

After the Wilcox family died in the 1930s, the home was converted into a restaurant that operated until 1961. To afford the property some protection, it was added to the National Register of Historic Places in 1966. In 1971, the home opened for the first time as a public museum. Today, the Theodore Roosevelt Inaugural Site continues to honor the legacy of both William McKinley and Theodore Roosevelt through tours, programming, and preservation.



TRICO PLANT #1
817 Washington Street
Buffalo

This daylight factory building was the original home of the Trico Products Corporation. Trico was founded by businessman John R. Oishei who recognized the need for windshield wipers on automobiles after striking a cyclist with his car during a heavy rainstorm. In 1917, he teamed up with local inventor John Jepson and began marketing their new product to automobile manufacturers. Within three years, Trico had contracts with Pierce-Arrow, Cadillac, Lincoln, and Packard. When the company needed more space for operations, it purchased the former storehouse of the Christian Weyand Brewery in 1920. Between 1920 and 1950, seven buildings were constructed at the site, including the original brewery building: building #10 in 1923, building #2 in 1924, building #3 in 1928, building #7 in 1936, building #8 in 1937, building #9 in 1954.

Trico operated at the plant for over 75 years, until they relocated the majority of their production to Texas and Mexico in the late 1990s. The factory was added to the National Register of Historic Places in 2001, affording it some protection as the city decided what to do with the massive structure. In 2003, a plan was submitted for an adaptive reuse of the building as residential apartments. The plan fell through, and the plant was acquired by the Buffalo Niagara Medical Campus in 2007. After the demolition of select buildings, 242 apartments were then planned for the site. The first tenants moved into the space in 2024, and the project is just about finished as of spring 2025.



WEST FERRY STREET BRIDGE
1 West Ferry Street
Buffalo

An important location on Buffalo's waterfront, West Ferry Street runs horizontally across the city and terminates at the Niagara River. As part of a project to construct locks in this section of Blackrock, the Army Corps of Engineers proposed building a bridge connecting the West Side to Unity Island in 1913. The bridge was designed by the Strauss Bascule Bridge Company of Chicago. The bridge is considered rare, as there are not many surviving examples of this style of bridge. Between 2014 and 2016, the bridge underwent an \$8 million dollar rebuild.

were presented in the 1850s. Canada and the United States agreed to build a bridge that would connect the two countries, but the project was put on hold when the American Civil War broke out in 1861. The project was revisited after the war, and C.S. Gzowski & Co. was contracted to build the pivot bridge.

Construction would prove to be challenging owing to the speed of the Niagara River, as well as the amount of stone that had to be removed before work on the bridge could begin. Construction of the bridge cost \$1.5 million dollars and it was opened for the first time on November 3rd, 1873. Numerous railroad companies, anticipating the opening, routed tracks to the bridge, which routinely saw over 200 trains cross it per day. Today, the bridge is still used but at a much lower frequency; an average of 15 commercial trains use the bridge per day and it is closed to passenger trains altogether.



OHIO STREET LIFT BRIDGE
Buffalo River
Buffalo

The Ohio Street Lift Bridge was built in 1962 as a replacement for the original Brown bascule bridge built in 1906. The current bridge weighs 1000 tons, has a 275' span, and lifts to about 100' above the river. It is tower driven and is unique in the fact that it is programmable logic controller (PLC) computer operated. In the early 2000s, it underwent a three-phase rehabilitation, first replacing the steel deck and some steel members; second, electrical and mechanical systems were upgraded and the computer drive was added, and third, the east tower was replaced along with river bumpers and the roadway barriers. The bridge raises to allow lake freighters on the Buffalo River to access the Standard Elevator, which is still in operation. The bridge underwent a \$15 million rehabilitation from 2021 to 2022.



INTERNATIONAL RAILWAY BRIDGE
Buffalo

Prior to the construction of the International Railway Bridge, the only way to cross the Niagara River was by boat or ferry. Buffalonians soon realized the need for an alternative, and the first proposals for a bridge



RIGIDIZED METALS
658 Ohio State
Buffalo

Rigidized Metals Corporation was founded by Richard S. Smith (RSS) in 1940 to provide deep textured metal for industrial applications. Richard S. Smith chose Buffalo, NY as his headquarters in an

attempt to be close to two leaders in aircraft manufacturing, Bell Aircraft and Curtiss-Wright. The rigidizing process created by Smith dramatically improved the strength-to-weight ratio of metal, and both Bell and Curtiss-Wright quickly saw the benefit of using thinner, and thereby lighter metals without sacrificing strength. 85 years later, the Smith family still leads the world in the development and production of engineered metal surfaces for hundreds of applications.

From elevator cab interiors in Hong Kong to the 16-acre roof of the Doha Airport in Qatar, Rigidized Metals can be found around the world. Applications of their design-strengthened metals are as diverse as a fishing lures to the crowns of skyscrapers. Always on the cutting edge of design, Rigidized once hired famed industrial designer Raymond Lowey to create patterns for the company. Lowey designed a pattern that reflects light in seven different directions called the 1RL. Using this technology, in 1964, the Unisphere was unveiled in Queens NY for the World's Fair. All of the land masses were made out of the Rigidized pattern 1UN.

Today, Rigidized Metals Corporation works with architects, artists and engineers who challenge us to provide design solutions for a variety of projects. Buffalo artist Shasti O'Leary Soudant recently opined, "Rigidized makes metal come alive – their textures are delicious!"

F3 - Industrial Processes and Products, Past and Present

This tour will visit working facilities and adaptively reused sites in historic industrial neighborhoods on Buffalo's east and south sides. We will begin by visiting the modern **University at Buffalo Fabrication Workshops** for a process tour of latest technologies at the School of Planning and Architecture. Then, we will visit the **Oxford Pennant** plant, a designer and manufacturer of wool felt pennants, flags and banners as well as other custom goods. After a tour of the company's production processes, visitors will head to the Larkinville neighborhood, named after the major Larkin Company factory complex there. Walking through the repurposed building at 500 Seneca, the former **F.N. Burt Company Factory**, will serve as the backdrop for a history of the industrial heritage of the area. Following lunch, we will head to **ADM Milling** for a process tour of milling operations for flour and animal feed and then a walk over to an adaptive reuse project at Buffalo RiverWorks, formerly the **Wheeler / GLF Elevator**. For the last tour, we will walk around **Silo City**, an impressive complex of grain elevators that demonstrate the history of construction methods, transshipment networks, and industrial processes that stored and transformed grains into malts, flour, and other products for consumption nationwide. This site contains one of the world's best extant collections to demonstrate the impact of Buffalo's grain industry on the history of American production, economics, architecture, and technological innovations.



UNIVERSITY AT BUFFALO SCHOOL OF ARCHITECTURE AND PLANNING FABRICATION WORKSHOP AND SMART FABRICATION FACTORY
Parker Hall - Hayes Road
Buffalo

The Fabrication Workshop is a fully equipped facility occupying 7,000 square feet of high-bay space in Parker Hall on UB's South Campus. It contains the Shop for woodworking, metalworking, and assembly, and the digital FabLab, providing the versatility to work across multiple scales from model and component building to full-scale prototyping and installations.

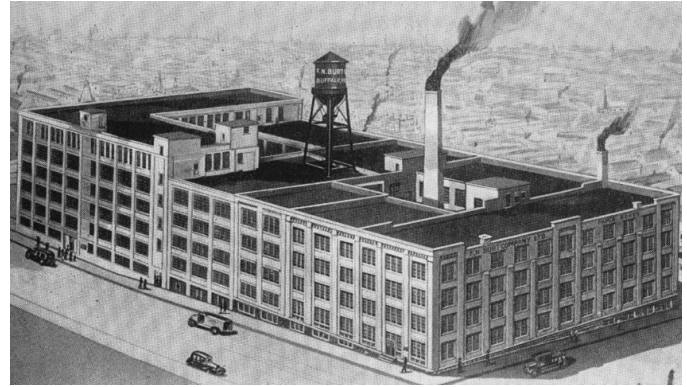
The SMART Fabrication Factory, also located in Parker Hall, is a prototyping facility that supports research with industry and faculty research in material fabrication and digital craft. The Factory is a component of UB's SMART Community of Excellence (Sustainable Manufacturing and Advanced Robotic Technologies), which brings together architecture, engineering, management and economics to advance research in next-generation technologies and processes in advanced manufacturing.

Since 2016, representatives of industry and academia from around the world have gathered annually in Buffalo for the Architectural Ceramic Assemblies Workshop (ACAW), presented by Boston Valley Terra Cotta and the University at Buffalo School of Architecture and Planning, and supported by the UB Sustainable Manufacturing and Advanced Robotic Technologies (SMART). The workshop's objective is to introduce and consider the properties of terra cotta early in the architect's design process and to develop research and design models between manufacturing and architectural industries useful to the efficient production of high-performance facade solutions. Each year, ACAW culminates in UB's fabrication facilities for a weeklong event where teams construct prototypes and present their studies to peers in the industry.



OXFORD PENNANT
810 Main Street
Buffalo

Founded in 2013 by Dave Horesh and Brett Mikoll, Oxford Pennant has transformed itself from a small local operation to a nationally recognized business that works with everyone from major companies to professional sports teams. After only a few years in operation, Oxford Pennant became recognized as the foremost producer of banners, flags, and pennants in the United States. Originally located at 731 Main Street in Buffalo, the company relocated its manufacturing department down the street to a larger building at 810 Main Street in 2021. The 12,000 sqft facility provides ample space for both retail and production operations. As of January 2025, Oxford Pennant has officially sewn their one millionth product and have a 52-person team.



500 SENECA
500 Seneca Street
Buffalo

500 Seneca was originally built in seven stages from 1901 to 1927 by the FN Burt Box factory. The area was known as the “Hydraulics District”, an early manufacturing center in Buffalo named after the canals that flowed through the neighborhood that provided power for mills. The FN Burt Box Company was one of the city’s largest employers, and unique to this era, a woman named Mary Cass took over operations in 1909. During a time where women were still unable to vote, Cass proved to be one of the most influential businesswomen of the early 20th century.

The building itself was known as a “daylight factory” and features two carve-outs in the center, forming a courtyard around which the buildings were constructed. In 1927, an atrium was added to the center. This allowed daylight to penetrate deep into the factory, brightening the floorspace for workers.

In 1957, the FN Burt Box Company relocated to a new facility in Cheektowaga. This move left 500 Seneca vacant until 2015, when developer Sam Savarino and a partnership of owners stepped in to rehab the building. A \$44 million investment made possible by historic tax credits turned the vacant facility into 96 apartments and 30 retail spaces. The apartments and retail space are 95% full, with tenants that include bagel shops, yoga studios, and restaurants. Today, 500 Seneca has been transformed from vacancy to a neighborhood anchor that generates more than \$800,000 per year to the city and county tax rolls. Its success is a great example of the government and private sector working together to preserve Buffalo’s history.



LARKIN COMPANY/LARKINVILLE
745 Seneca Street
Buffalo

The Larkin Soap Company was founded in Buffalo in 1875 by John D. Larkin. Among the principals were Larkin, Elbert Hubbard, and Darwin D. Martin. By the early years of the twentieth century, the company expanded beyond soap manufacturing into groceries, dry goods, china, and furniture. Larkin became a pioneering, national mail-order house with branch stores in Buffalo, New York City and Chicago. The Larkin Company looked to avoid the costs associated with middlemen and sold directly to consumers. This business model was known as the “Larkin Idea”. To entice customers to purchase more goods, “premiums” were offered. Premiums were awarded for every \$10 that a consumer spent, and they were often other high-end Larkin products like silverware and phonographs.

Owing to their growth, the company decided to expand its complex in Buffalo, New York in 1902. At the time it commissioned its headquarters, Larkin was prosperous and the high price for a well-designed, innovative building was not a barrier. The company hired architect Frank Lloyd Wright to design their headquarters, and, known for its generous corporate culture, also commissioned Wright to design row houses for its workers, which were never built.

The first-floor plan was for the lobby and mail grouping, the second floor consisted of the type-writer operators’ department, the third floor was the mail department, the fourth floor was the mail room, and the fifth floor consisted of a restaurant and kitchen, balconies, and a conservatory. When the building was completed, the area around it experienced unprecedented growth in the form of additional businesses and factories. “Larkinville”, as it was dubbed, housed close to 90 businesses by 1900, and the area remained an important manufacturing hub up until the 1940s.

The Great Depression, corporate instability, and inexperienced executives, however, led to the Larkin Company being liquidated in 1942, and the surrounding neighborhoods and businesses suffered as a result. In what is one of Buffalo’s greatest architectural tragedies, the Larkin Administration Building was demolished in 1950.

The Larkinville area continued to decline until 2002, when a new initiative to revitalize the area was started by the Larkin Development Group. The goal was to create a vibrant, mixed-use community with public events and eateries. New streetlights, signage, and plantings were placed along Van Rensselaer and Seneca Streets as a first step, followed by new apartments and restaurants like the Swan Street Diner and Hydraulic Hearth. Today, Larkinville continues to grow, and the area attracts visitors from across Western New York for public concerts and food truck Tuesdays.



SILOS AT ELK
50 Elk Street
Buffalo

The first structures that would make up the Silos at Elk Street were built by Frank A. Dole in 1894 and purchased in 1910 by William E. Kreiner and Peter Lehr, who formed Kreiner & Lehr Malt House. The malt house remained in the Kreiner family until 1971, when the company closed, and was bought in 1975 by Buffalo Malting Corp. Buffalo Malting operated in the building until 1986, after which it was abandoned.

When Jerry Young and Shawn Wright bought the building at an auction during the fall of 2015, it was scheduled for demolition. Much of the masonry was crumbling, there was graffiti on the walls and silos, and windows had been filled in completely. Debris

and graffiti littered the interior of the building as well. Aside from cosmetic challenges, it is generally difficult to convert grain silos into habitable buildings.

Young + Wright Architectural worked to create the malting house into office space by adding structure and floors. Some machinery was removed, while other pieces were kept to become integral to the new space. When YWA officially moved into the office in the summer of 2018, the Silos had been transformed into a completely different function. Today, the Silos on Elk Street is home to offices, residential lofts, a barber shop, and an event center. This once abandoned building has a new life almost a century after it was originally built.



**RIVERWORKS – FORMER SITE OF THE WHEELER/
GLF/AGWAY ELEVATOR COMPLEX**
385 Ganson Street
Buffalo

The Cooperative Grange League Federation Elevator (GFL), also known as the Wheeler Elevator and Agway Elevator, is located at 385 Ganson Street. The complex was built in several sections beginning with the Wheeler Elevator (GLF “B”) in 1908 and ending with construction of GLF “A” in 1941. The Wheeler Elevator was designed by H.R. Wait, company engineer for the Monarch Engineering Company that built the elevator. Wait’s design was the first in Buffalo, and one of the first in the country to utilize outer space “pocket bins.” The bins occupied all of the pockets between the outer wall of the main bins, hence the name. Constructed using slip-form construction, the bins reached their full height after a twenty-day continuous pour. The bins were open at the top which increased capacity but also increased the threat of explosion. The open bin construction is not seen at any other elevator in Buffalo.

In 1929, GLF purchased the Wheeler Elevator and constructed a feed mill designed by A.E. Baxter Company. In contrast to the unadorned Wheeler Elevator, the new feed mill has two elevator towers with castellated parapets rising about the six-story mill at its northern end.

The next phase of construction occurred with the Wheeler Annex, also designed by A.E. Baxter Company in 1936. The Annex was made up of six bins arranged in two rows located to the north of the Wheeler Elevator – currently referred to as the “six pack.” The largest elevator in the complex, GLF A, was designed by the James Stewart Company and constructed in 1941. GLF A, with a capacity of 1,000,000 bushels, is made up of the main storage house and integral workhouses located at the east and west ends. The eastern workhouse is the tallest in Buffalo at 205’-3”, providing a prominent vertical marker along the Buffalo River.

GLF was a highly successful company, virtually immune to economic variations. The company survived the Great Depression and produced 100,000,000 bags of animal feed per year with gross sales in excess of \$30 million. GLF continued operations until 1964, when they merged with the Eastern States Farmers Exchange to form Agway, Inc., a single farmers’ cooperative of unprecedented size. Despite Buffalo’s bid, the company headquartered itself in Syracuse, New York, which was centralized within the expanded geographic district. By 1974, Agway began to decentralize their operations, moving the feed division offices from Buffalo to Syracuse. That same year, all of the feed operations were moved to Jamestown, New York and Batavia, New York. The intent was to locate smaller production facilities closer to the farm populations they served. By the end of 1974, the Ganson Street facility was shut down.

The complex remained vacant, and an emergency demolition permit issued in 2011, citing that some of the structures were in imminent danger of failing. On November 2, 2011 the Marine leg collapsed into the Buffalo River during demolition. Demolition on the site stopped and by 2013 plans to transform the site into a 60,000 square foot entertainment and recreation venue began, resulting RiverWorks. Today, RiverWorks is a multi-use facility that has everything from concerts and ice hockey, to ziplines and a Ferris wheel. Every summer, RiverWorks boasts visitation numbers that exceed 500,000 guests.



ARCHER DANIELS MIDLAND (ADM)
250 Ganson Street
Buffalo

The building known today as the ADM factory utilizes part of a historic grain elevator complex to produce flour and animal feed today, which is just one of the company's 270 factories nationwide.

Over the years, ADM Milling in Buffalo expanded its facilities to accommodate growing demand. Located on the east side of Buffalo's outer harbor, the building complex was constructed in 1897 as the Great Northern Elevator and was designed by Max Toltz and D.A. Robinson of the Great Northern Rail Company. It was one of two steel grain elevators constructed on Buffalo's waterfront that year, the other being the Cargill Electric Elevator. Together, they represent the first elevators in the nation designed to utilize electricity, provided by nearby Niagara Falls. The grain elevator portion, used to store and transfer grain, was constructed adjacent to a tall rectangular factory building used for industrial processes in the manufacturing of grain products, a common architectural relationship.

The Great Northern Elevator was the first of its kind - it was the first grain elevator in Buffalo to use interstitial bins, to capitalize on valuable storage space between the large cylindrical bins, rather than the rectangular ones that typified earlier elevators. The bins were innovative in their use of material, size, and arrangement. Forty-eight cylindrical steel grain bins were positioned in a pioneering arrangement that accommodated two different sizes with interstitial placements. As the first elevator in Buffalo to use an interstitial arrangement of cylindrical bins, it was a testament to the thoughtful, innovative design of this structure in response to the specific technical and economic demands of the grain industry.

In 2021, after a fierce winter wind took out a third of the brick curtain; the building was subsequently condemned and demolished in 2023. The factory building, however, was maintained and is still used for ADM's industrial processes in the manufacturing of grain products.

The main ADM plant has undergone several upgrades to incorporate advanced milling technologies, ensuring high-quality flour production. The expansion included the installation of modern milling equipment, storage silos, and packaging lines. Innovations in milling processes, such as roller milling and automated systems, allowed for increased production capacity and consistency in flour quality. The Buffalo facility became a model of modern milling practices.

In addition to traditional flour, ADM Milling diversified its product offerings to meet evolving market demands. The Buffalo plant began producing specialty flours, including whole wheat varieties. This diversification enabled ADM to cater to a broader customer base, including bakeries, food manufacturers, and retail consumers.

ADM Milling has been a significant employer in Buffalo, providing jobs for hundreds of local residents. The facility's operations created employment opportunities in various roles, including milling, maintenance, quality control, and administration.

In recent years, ADM Milling has placed a strong emphasis on sustainability. The Buffalo facility has implemented measures to reduce its environmental footprint, including energy-efficient technologies, waste reduction programs, and responsible sourcing practices. These initiatives align with ADM's commitment to sustainable and responsible business practices. Through technological advancements, diversification of products, and a commitment to sustainability, ADM Milling continues to thrive and contribute to the success of Buffalo and its residents.

SILO CITY
85 Silo City Row
Buffalo

Silo City sits on ancestral land of the Haudenosaunee peoples, now called the First Ward in Buffalo, New York. The 27-acre campus sits on the Buffalo River and is a stone's throw from Lake Erie. Proximity to water led the site to be built as a central hub for grain trade in the late 19th and early 20th century.

Silo City houses a collection of historic grain elevators known as “Elevator Alley” and is the world’s largest collection of concrete grain elevators, which hosted six different companies that were all major players in Buffalo’s economy.

The grain elevators built at Silo City were used for storing wheat and barley and entered the site via large ships and by rail.

The American Warehouse and Grain Elevator were constructed in 1906 and functioned as both a storage facility and a research and development hub for the American Malting Company. American elevator played a key role in beer production for the Eastern market until Prohibition brought operations to a standstill. The Perot Malt House and Grain Elevator were established in 1907 for the malting and storage of barley. Marine A Grain Elevator was constructed in 1925 and was built with approximately 120 feet of solid concrete and is regarded as the first of its kind. The last of the six structures, Lake and

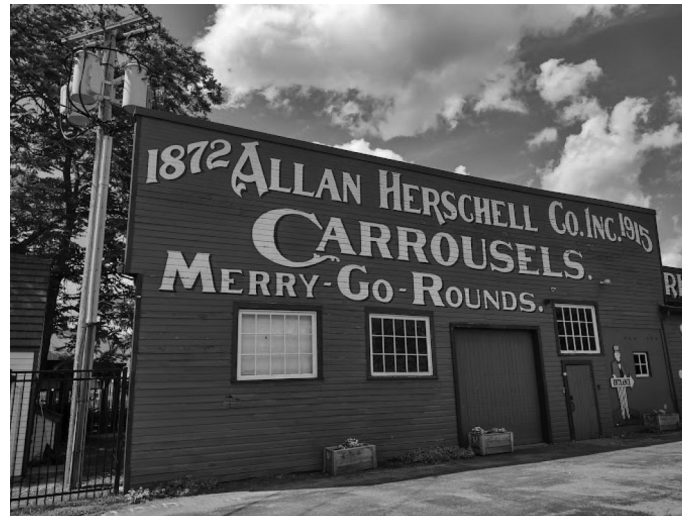
Rail Elevator, was built in four stages from 1927 to 1930, eventually reaching a remarkable capacity of 4,400,000 bushels upon its completion.

In addition to their historic role in the region’s grain trade, these concrete behemoths are significant as inspiration for the Brutalist Movement architectural style made popular in the 1950s-1970s. The construction of the Marine A grain elevator marked the first time that continuous pour concrete method was used, which was later adapted as a widespread construction practice.

Following disbandment from the rise in alternative shipping routes in the 1950s- 1980s, the silos became historical relics, and the surrounding land grew into urban wildland. In 2006, Rick Smith III of Rigidized Metals Corp. bought the derelict grain elevators and offices and over time transformed the site into a unique campus that exemplifies creative post-industrial regeneration focusing on experiential history, arts, culture and ecology.

F4 - Harnessing the Power of Niagara Falls

This tour features the heritage of hydroelectricity as it developed and enabled industrial activity north of the city, including the famous power station at Niagara Falls. The tour heads past the often-overlooked **Terminal A** building on Niagara Street, designed by Louise Bethune to house Nikola Tesla's electric transformers that made possible the first long-distance transmission of electricity in 1895. We will pass near a historic iron pivot bridge to visit North Tonawanda, a town north of the City of Buffalo, with an extensive history of lumber production in relation to the New York Canal system and nearby waterways. A historic process tour of the **Herschell Carousel Factory Museum** will provide insight into the industrial production of carousels there, including the wood carving floor and the still-operational, historic equipment in the Wurlitzer Music Roll Department, which demonstrates the production of paper music rolls. This is the only public display of equipment of this type in the country. Heading to Niagara Falls, the tour will view the **Love Canal memorial**, **Echota**, and the **Buffalo Avenue Industrial District**, then take a walking tour of the **Schoellkopf Plant Ruins**. After lunch, visitors will go on an in-depth process tour of the **Niagara Power Station, Reservoir, and Water Intake Plant**, which together serve a critical role in harnessing hydroelectricity from the Niagara River in Niagara Falls. On the way back to Buffalo, we will pass the Whirlpool Bridge piers. The final process tour of the day will be a one-of-a-kind, behind the scenes visit to the **Buffalo Sewer Authority** sewage treatment plant before returning to the hotel.



HERSCHELL CARROUSEL FACTORY/MUSEUM
180 Thompson St.
North Tonawanda

In 1911, Allan Herschell retired from the Herschell-Spillman Company after a disagreement about the direction that the company was going. Allan's partners and brothers-in-law Ed and Al Spillman were engineers who wanted to concentrate on the production of gasoline engines. This redirection led to Allan leaving the business. In 1915, Allan came out of retirement and opened his new company, the Allan Herschell Company, a direct competitor for the Herschell-Spillman Company.

Allan's new factory was housed in a building built prior to 1900. The King Construction Company had built prefabricated greenhouses for Victorian homes on the site. The multi-building factory also housed a company that built wooden boxes for storage and shipping containers. The large front room had a clerestory construction, which provided the ample light needed for woodworking and wood carving. The adjoining rooms were used for painting and finishing.

As the space grew over the years, a brick firewall with rolling steel doors was added to safely separate other work areas. A room for electrical work was also added, as well as a storage space on the second floor. A large room that once housed the box construction operation became the machine shop. Gears and other components were processed in this area.

In 1914, prior to the factory opening, a roundhouse was built. This was to be the test room for all of the rides that the company would make. A loading dock was constructed on the side of the roundhouse and

a railroad siding was located next to that. Rides were tested, balanced, packed in shipping containers, and sent around the world by train and boat.

In 1919, the Herschell-Spillman Company reorganized into the Herschell-Spillman Motor Company and Spillman Engineering. The Herschell-Spillman Motor Company made gasoline engines for 70-plus automakers. By 1924, the Herschell-Spillman Motor Company was out of business. In 1945, the Allan Herschell Company bought out Spillman Engineering to become the largest amusement manufacturer in the world.

The Herschell Carrousel Factory Museum is now located on this site. It is the only carrousel museum that is housed in an original carrousel factory. The museum honors the history of the amusement ride and related musical instrument industry in North Tonawanda and its relevance to U.S. and world history.



LOVE CANAL 97-99th Streets Niagara Falls

William T. Love came to Niagara Falls in 1892 to build a model community with easy access to markets and abundant inexpensive power. The key to his development was a canal that would supply power to nearby industrial sites. By 1896, Love had abandoned his plans. Some 45 years later what remained was a ditch, approximately 75' wide and 3000' long, called Love's Canal. The canal was located just outside the Niagara Falls city limits, and the area was sparsely populated.

In 1941, Hooker Electrochemical Company determined that Love Canal was suitable for use as a landfill. The new site was needed to accommodate increased volumes of waste resulting from war-related chemical

production. Hooker utilized the canal for disposal from 1942 to early 1954. Disposal amounted to a "dig, bury, and cover" operation. At the time it was considered to be an improvement over the usual practices of open dumping or untreated disposal in the most convenient waterway. Over a twelve-year period, Hooker filled the northern and southern thirds of the canal with manufacturing residues and plant wastes.

By 1954, residential growth had expanded into the area surrounding Love Canal. The Niagara Falls Board of Education requested that Hooker sell the canal property so that the city could use it for a school. Initially reluctant, Hooker transferred the property to the School Board after a site investigation, along with a deed that disclosed the contents of the canal. The 99th St. School was built adjacent to the unfilled central portion of the canal. Houses were subsequently constructed on properties east and west of the canal property. Roads and sewers were built through the area as well. Eventually, the northern and southern portions of the canal were transferred to the city as well as a private developer.

During the ensuing years there were incidents of subsidence and chemical waste exposures. Landowners placed and graded additional fill or cover over the residues. Hooker provided assistance and advice when requested. In the late 1970s it became apparent that there were chemicals being released from the canal and that neighbors were experiencing cancer diagnoses and birth defects as a result. The city, Niagara County, and Hooker began the process of remediation.

The initial focus of the remedial plan was containment of the chemicals through a system of barrier drains, on-site leachate treatment, and a clay cap. In 1979, the State of New York took responsibility for the remediation. Through a series of orders, the State and Federal governments relocated hundreds of families in the surrounding area and eventually purchased their homes. All but two structures in the two rings of homes closest to the canal itself were demolished and covered under the cap that seals the site today. Other remedial efforts have addressed the clean-up of off-site chemical migration to sewers and creeks.

Love Canal has given rise to numerous legal proceedings, some settled, some now in court, and some pending. Still to come is a resolution of the apportionment of remedial costs as well as some private suits, though the majority of those cases have been settled. Throughout the litigation industrial historians, both avocational and professional, have provided insight into the social, technical and regulatory context surrounding Love Canal and the

chemical industry of Western New York. The entire containment process took about 21 years and cost close to \$400 million dollars.

ECHOTA

Hyde Park Boulevard and Buffalo Avenue Niagara Falls

Some remnants remain today of this planned community designed for workers of the Niagara Falls Power Company during the late nineteenth century. With the advent and boom of long-distance transmitted hydroelectricity in the 1890s, the Niagara Falls Power Company needed to attract workers to the city. They secured 84-acres of vacant land, around what is today Hyde Park Boulevard and Buffalo Avenue, to build worker homes. Workers would live near the company, walk to work, and rent affordable homes in a seemingly utopian planned community, a company town.

World-renowned architect Stanford White designed the neighborhood and houses. Instead of names, the streets were assigned letters A-F. Maple and elm trees were planted. Between 1892 and 1895, 67 houses, or 112 total units, were built as singles, duplexes, and row houses in Queen Anne and Georgian architectural styles. Beneath the triangular gables of the natural wood shingle homes were luxuries like running water, indoor plumbing, and electric lights. Electricity, even for many wealthy families, was still years away for most homes. The community was designed with both traditional revival style architecture and cutting-edge, modern electric amenities so that workers could enjoy the fruits of their labor. Echota had a community center, a school, stores, a firehouse, a public bath, and a railroad station.

The name of the community, 'Echota', has strange origins and associations that are not clearly linked to the company town. Edward Dean Adams, president of the Cataract Construction Company, chose the name Echota after the ancient Cherokee capitol in Georgia. Even though the original meaning of the word had become lost, Adams romantically interpreted it to mean 'town of refuge.'

Echota began to decline in 1910, after the company sold it. No longer funded and maintained by the electric company, the buildings became dilapidated and eventually, vacant, as workers moved out. In recent years, Habitat for Humanity has built new homes in the area and others have worked to restore the old homes. In many ways, the working-class community of Echota is a story of water and light, innovation, intense labor, and the people who helped make electricity available worldwide.



**ADAMS POWER PLANT (POWERHOUSE NO. 1)
1501 Buffalo Ave
Niagara Falls**

By the late 19th century, the then-novel concept of widespread electrical power for Americans seemed out of reach. Buffalo's close proximity to Niagara Falls however, made the seemingly impossible, a reality. Following a plan created by engineer Thomas Evershed, the Cataract Construction Company led by Edward Dean Adams was tasked with creating a power generation station to harness the power of the nearby world wonder. To alleviate the problem of transmitting electricity over long distances, the proposed Adams Power Station would serve as the central plant.

The power plant received financial backing from men like John Jacob Astor, W.K. Vanderbilt, and J.P. Morgan. In early 1895, construction began with the support of Westinghouse Electric, which was subcontracted to build 5,000 horsepower alternating-current generators. The building was designed by architecture firm McKim, Mead and White, and locally sourced limestone was used as the main building material.

Powerhouse No. 1 (as it was called then) delivered its first power to the city of Buffalo on November 15th, 1896. Using a 26-mile AC line, Buffalo became the first city to have widespread electrical power. For the next sixty years, the Adams Power Plant served as the main provider of electricity in the area until they were put on "standby" in 1926, before finally being decommissioned after the construction of the Robert Moses Plant in 1961.

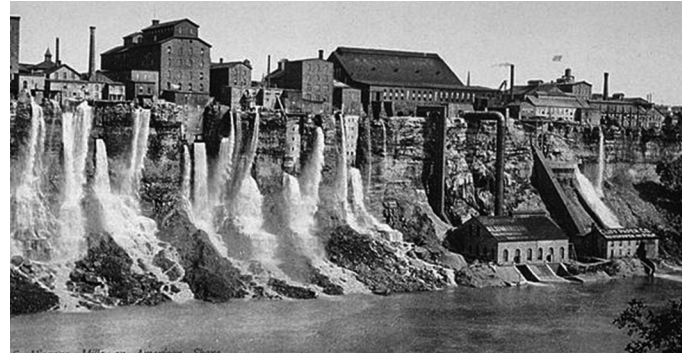
The Adams Station suffered the same fate as many landmark innovations: it was initially successful and quickly outmoded. By the time the plant went on standby in 1921. Its 110,000 hp capacity was being

dwarfed by continued incremental improvements such as the three Allis-Chalmers units then being readied for installation in Schoellkopf Station 3-C. Each was designed for 70,000 hp and 65,000 kva at 107 rpm under 213' head. Devoid of original equipment, The Adams Station Transformer House is now distinguished chiefly by its architectural lineage.



ROBERT MOSES PLANT

After the collapse of the Schoellkopf Power Stations in 1956 that resulted in \$100 million dollars of damage, a replacement hydroelectric plant had to be constructed. The New York Power Authority (NYPA) proposed an \$800-million-dollar power plant that would replace the partially collapsed stations. Named after Robert Moses, the head of the NYPA at the time, the project was approved in 1957. The new plant was planned to be much larger than the original, so it required an extra 550 acres of land that were part of the local Tuscarora Reservation. The NYPA seized the land under eminent domain, a decision that was backed by a ruling in the Federal Power Commission v. Tuscarora Indian Nation court case. The facility was completed and opened for the first time in 1961. It was the largest hydropower facility in the Western Hemisphere at its opening. The plant has a total capacity of 22 billion gallons, and its 13 generators produce 200,000hp each. The plant's total power output is rated at 2,300 megawatts. The site was added to the National Register of Historic Places in 2017, coinciding with a \$460 million dollar modernization project that occurred from 2012 to 2021.



SCHOELLKOPF POWER STATION Niagara Falls State Park Niagara Falls, NY

Jacob F. Schoellkopf was born in current-day Germany and travelled to the United States at 22 years old in 1841 with hopes of striking it rich. With money provided by his father, Schoellkopf started a tannery in Buffalo and was soon successful enough to purchase neighboring tanneries. In 1857, he began investing in local mills. Inspired by this new influx of wealth, Schoellkopf took note of the business potential of nearby Niagara Falls. The advent of electricity promised fortunes for those with the foresight to invest. In 1877, he purchased the Niagara Falls Canal Company, planning to use the canal to generate electrical power for the nearby cities of Niagara Falls and Buffalo.

Direct current electricity for local consumption was generated as early as 1881 by Jacob F. Schoellkopf's newly established Niagara Falls Hydraulic Power and Manufacturing Company. From 1905 to 1924, a series of three plants were built at the base of the falls, the entire operation constituted the largest hydroelectric power station in the world. At the top of the falls were offices, gatehouses, and other buildings that assisted the operation. At its peak, the Schoellkopf Power Station generated close to 450,000 horsepower, enough to power tens of thousands of homes.

The plant successfully operated at Niagara Falls for over 30 years, until 1956, when a catastrophic accident destroyed the facility. On June 7th, the rear wall of the plant became compromised and began to fill with water. Workers did their best to patch the leak with sandbags, but to no avail. At 5pm, the wall gave way and the majority of the station collapsed into water. One worker was killed in the incident and the damage was estimated at close to \$100 million dollars. Today, the site houses the boats from the popular Maid of the Mist attraction that tours Niagara Falls.

BUFFALO SEWER AUTHORITY
90 W Ferry Street
Buffalo

The City of Buffalo first began laying sewers in the 1830s, primarily as a means for private citizens to drain properties within the historical wetland areas in and around downtown Buffalo. By 1848, the city itself began to lay public sewer mains to drain sewage and stormwater throughout the city's core, with all pipes discharging to the nearest waterways. After the Civil War, as the population of Buffalo began to grow quickly, a plan for a comprehensive sewage collection system throughout the city and a major trunk sewer system between these smaller pipes and the Niagara River was developed. Constructed throughout the period of 1870-1900, this plan eliminated cholera and other waterborne illnesses throughout the City of Buffalo. However, the polluted waters from the sixth largest city in the United States continued to flow untreated into the Niagara River, causing illness and foul conditions downstream.

While this issue was well documented by the governments of the United States, New York State, the province of Ontario, and Canada (then still a dominion of the British Empire), the City of Buffalo had neither the will nor the financial capability to address the problem. As a result, the Buffalo Sewer Authority was created by the New York State Legislature, with approval of the Governor Herbert H. Lehman, on April 8, 1935, to "provide an effectual means for relieving the Niagara River, Buffalo River and Lake Erie from pollution by sewage and waste" and "inadequate sanitary and storm water drainage". Over the next four and a half years, with significant federal funding, the Buffalo Sewer Authority constructed a physical treatment facility and a series of sewers ranging in size from 18" to 11' to intercept the existing combined sewage system and reroute flows to the treatment facility.

On September 12, 1939, the Bird Island Treatment Facility was officially dedicated, thereby all but eliminating typhoid in Western New York after decades of having the highest rates recorded in North America

at the time. Throughout the 1950s and 1960s, the Buffalo Sewer Authority continuously improved the city's sewer system to reduce flooding, and solids handling at the treatment facility was expanded to meet needs. By the late 1960s, the need for cleaner waterways throughout the United States began to be prioritized by politicians, scientists, and everyday citizens and an expansion of the treatment facility to incorporate biological treatment was planned. A decade later, on July 7, 1979, the Secondary Treatment Expansion was dedicated at the Bird Island Treatment Facility, ensuring that wastewater treatment met modern standards. One year later, the Kelly Island Sanitary Sewer system began operating, eliminating industrial discharges to the Buffalo River and laying the groundwork for recreational usage of Canalside and the Outer Harbor today.

From the 1980s through the 2000s, Buffalo Sewer continued to expand and modify the collection system within the City of Buffalo to reduce combined sewer overflows and ensure cleaner waters for their residents and downstream communities. During this time, the grit handling building was added to the treatment train. Over the past ten years, ten new Smart Sewer facilities have been brought online to ensure that hundreds of millions of additional gallons of wastewater reach the treatment facility each year instead of overflowing into our waterways.

On October 19, 2022, the Buffalo Sewer Authority officially broke ground on the first of three phases of treatment system upgrades, which will fully restore the facility to its 1979 capacity and then expand that capacity to 560 MGD during wet weather. In conjunction with the estimated \$250 M+ in improvements to the treatment facility, over \$750 M is being invested in their collection system to limit combined sewer overflows to a maximum of 9 events per year. Additionally, hundreds of millions of dollars will be invested in both the facility and collection system over the next decade and a half to ensure that these aging systems continue to serve the people of the City of Buffalo, Western New York, and the Niagara Peninsula for decades if not centuries to come.

Post-Conference Sunday Tours

S1 - Buffalo Harbor Cruise

This three-hour cruise of Buffalo's waterfront will offer an unparalleled opportunity to explore Buffalo's industrial past and present from the best vantage point (and where it all began): the water. The cruise will begin by venturing out on Lake Erie, where visitors will not only be offered a spectacular view of the city and the surrounding lakeshore, but the chance to appreciate Buffalo's strategic position at the east end of Lake Erie, the mouth of the Buffalo River, and the source of the mighty Niagara. From there, the cruise will venture up the Buffalo River and down the City Ship Canal to explore the important indus-

trial sites of Buffalo's harbor—from the terminus of the Erie Canal at Commercial Slip, to the site of the world's first grain elevator, to the many extraordinary, monumental silo complexes - including those still active - that have shaped Buffalo's industrial heritage as the world's largest grain port, and to the many bridges, boats, lighthouses, and other "harboriana" that further define these waterways. The harbor cruise will not only offer visitors the chance to encounter (and photograph) these sites up close, but also the opportunity to see and learn how the waterfront is being transformed today.

S2 - Explore Buffalo Walking Tour & Edward M. Cotter Fireboat

Join Explore Buffalo for a downtown walking tour of the best of Buffalo architecture and history! The buildings included on this overview tour help to tell the story of Buffalo's rapid rise to prominence, from the opening of the Erie Canal to the 1901 Pan-American Exposition. Buildings seen on this tour were designed by both nationally and locally significant architects, including Louis Sullivan, Richard Upjohn, Louise Bethune, and EB Green. Perfect for both visitors and residents alike, this tour is an excellent introduction to Buffalo's architectural heritage. This is an exterior-only tour.



Edward M. Cotter
155 Ohio St.
Buffalo

The Edward M. Cotter fire boat, originally named the William S. Grattan, was built in 1900 by the Crescent Shipyard in Elizabeth Port, New Jersey. It is the oldest active fire boat in the world. Along with its firefighting duties it breaks ice in the Buffalo River and Buffalo harbor. The boat is 118 feet long, 24 feet wide and draws 11 feet draft. The hull is constructed of 1-1/2-inch-thick Swedish steel with extra bracing for ice breaking. Originally, the boat was powered by coal fired boilers with a steam engine.

On July 28, 1928, the Grattan was working as an oil barge when an explosion occurred and set the wooden pilot house on fire. The crew abandoned the ship, leaving the boilers unattended. When the boilers ran dry, they exploded, destroying portions of the ship. The Grattan was overhauled at the Buffalo Dry Dock Company and outfitted with new oil fired boilers, steam engines and an extra turret, which was added to the top of the pilot house.

In the 1950s the boilers and steam engine began to show their age and in 1952, the Grattan sailed to the Sturgeon Bay Shipbuilding Company for an overhaul. The boilers and steam engine were removed and replaced with diesel engines. New pumps were installed, and the wooden superstructure was removed and replaced with a steel one. The single screw was also removed and replaced with twin screws. The boat was renamed the Edward M. Cotter in 1955 after a respected Buffalo firefighter and leader of the local firefighters' union.

On October 7, 1960, the Maple Leaf Milling Company in Port Colborne, Ontario, Canada caught fire. The fire burned for two days, and in response, the Port Colborne Fire Department called Buffalo to request assistance from the Cotter. The trip from Buffalo to Port Colborne takes two hours, and it took nearly four hours to bring the fire under control. This is the first time a United States' fire boat crossed an international border to assist another fire department.

The Cotter now has a total of 6 engines: two 4-cylinder Caterpillar engines at the stern, each operating a 50 kw generator for electrical power. Forward of the generators are two Caterpillar 12-cylinder engines for propulsion, and forward of the propulsion engines are two identical engines for pumping.

Things to Do While in Buffalo

After the scheduled tours, conference attendees can enjoy the city on their own terms. With nothing planned, here are some suggestions for SIA Conference Guests: Visit the **Elmwood Village** or **Allentown** for restaurants, shopping, and nightlife. Take a stroll down Main Street to take in Buffalo's historic Theatre District, home to the extravagant **Shea's Theatre**. View one of the largest collections of modern art in the United States at the **Buffalo AKG Museum** (open until 8 p.m. Thursday and Friday). If you are looking to indulge in some of the local cuisine, check out the **Buffalo Wing Trail**, which details the 13 best restaurants to eat chicken wings at in the area. If you want to enjoy Buffalo's extensive waterfront, head down to **Canalside** for beautiful sights, walking paths, and multiple breweries like Southern Tier and the Labatt House.



Buffalo Naval & Serviceman's Park
1 Naval Park Cove
Buffalo

Berthed along the museum's 1300' frontage on the Buffalo River are three specimens of World War II-era technology for warfare at sea: the

cruiser USS *Little Rock* (retrofitted with guided missiles), the destroyer USS *The Sullivans*, and the submarine USS *Croaker*. The site was once occupied by the freight house of the Delaware, Lackawanna & Western RR. The area served as Buffalo's commercial slip, connecting the Erie Canal with the Great Lakes. Located at the canal's terminus, the slip handled the majority of shipping that entered through the city's waterfront. Warehouses, manufacturers, groceries, taverns, chandleries, restaurants, "theater/playhouses", dance halls, brothels, hotels, forwarding companies, lake steamship lines ticket and company offices, and many other entrepreneurial businesses sprung up, eager to serve not only the immigrants traveling west, but also the lake sailors and canal boatmen. The introduction of railroads caused the Erie Canal to become obsolete, and the commercial slip was completely filled in 1901. This was until a sewer system was installed in the same location in 1927.

In 1976, the Buffalo Urban Renewal League requested a decommissioned naval ship from the United States Department of the Navy to create a naval park. The USS *Little Rock* and USS *The Sullivans* were a part of the original display, and the park opened for the first time on July 4th, 1979. In 1989, the USS *Croaker*, a Gato-class submarine, was added to the collection of ships at the park.

The commercial slip was restored in 2008, further safeguarding the Naval Park's preservation. By the 2010s, a museum and restaurant opened on-site to provide visitors with increased orientation and amenities. There are plans to drydock the ships in the near future to make repairs, after the USS *The Sullivans* partially sank in 2022.

**SOCIETY FOR INDUSTRIAL ARCHEOLOGY
MICHIGAN TECHNOLOGICAL UNIVERSITY
1400 TOWNSEND DRIVE
HOUGHTON, MI 49931-1295**

www.sia-web.org

