A proposal to remove a 1908 stone dam is threatening the integrity of Minnesota’s most complete rural historic mill district. The 1898 flour mill at Phelps, near Fergus Falls in the northwestern part of the state, is located on the Otter Tail River. The U.S. Fish & Wildlife Service (USFWS) is the lead federal agency in an ongoing effort to remove the river’s dams to facilitate fish passage.

The USFWS Mill Dam Fish Passage Project, proposed in cooperation with the Minnesota Dept. of Natural Resources (DNR) and Otter Tail County, includes no alternatives allowing the dam to remain. Removal would constitute an adverse effect, according to the Minnesota Chapter of the Society of Architectural Historians (MNSAH), a consulting party in the ongoing Section 106 review.

A recent cultural resources study determined that the Phelps Mill National Register Historic District is the most complete surviving rural mill complex in the five-state region of Minnesota, North and South Dakota, Iowa, and Wisconsin. Besides the mill and dam, the 9.4-acre district includes a 1907 pony truss bridge adjacent to the dam, the mill owner’s house, head miller’s house, store, and mill pond and landscape with no modern intrusions.

The study concluded that the dam is not only an important engineering structure, but that the water through the sluiceway, spillway, and over the dam constitutes a significant visual and auditory feature for the mill district. A large Area of Potential Effect (APE) was established, based on the extent of the area where the rushing water remained audible.

Originally named Maine Roller Mills after the local Maine Township, the mill closed in 1939. The county ac-

In This Issue:
- Pandora by Design Exhibit: A Personal View
- Dam Gate Outdoor Sculpture Dedicated
- GE 45-Ton Locomotive Preserved in New Home

(continued on page 2)
quired the mill property in 1965 to preserve it as a local park, whose area extends well beyond the district boundary. All original roller-mill equipment survives in the mill, along with two original turbines installed in exterior turbine houses.

The SIA Great Northern Chapter has indicated an interest in the Section 106 review, according to Tim Tumberg, chapter president. SIAN will continue following this story; stay tuned for future updates.

Bob Frame

The History and Heritage Committee (HHC) of the American Society of Mechanical Engineers (ASME) solicits advanced graduate students or recent post graduate students in history of technology/science to author brochures/essays for ASME's Historic Mechanical Engineering Landmarks program. The contracted honorarium for each brochure/essay is $500, payable on final acceptance.

For 2021–2022 the Committee seeks brochures/essays on

- John Smeaton’s water wheel experiments (ca. 1752)
- Navier-Stokes equations in fluid dynamics (1827, 1845).

Examples of recent Historic Mechanical Engineering Landmark brochures can be found on ASME’s website at https://www.asme.org/about-asme/engineering-history/landmarks. Please refer to the more recent Landmarks (#265—) for length, style, and content, but most tend to be about 3,000–4,000 words. Graphic design and layout are flexible, and the HHC can provide this for the final version.

This material should be written so that the significance of the landmark is understandable to intelligent, educated persons who may not be experts in the technology. Brochures normally include: (1) a description of the landmark and its significant features, including the context in which it emerged and particularly its technical aspects; (2) brief biographical sketches of the individuals most responsible for the concept, design, or construction; (3) an outline of the landmark’s impact on the evolution of mechanical engineering and/or on society; (4) one or ideally several copyright free/public domain illustrations, appropriately captioned; and (5) a short bibliography (or references for further reading) to aid those interested in additional study.

Submission of a polished first draft is due by Jan. 15, 2022. A History and Heritage subcommittee, including at least one professional historian of technology, will review the manuscript for content, accuracy, grammar, organization, and style and respond by Feb. 1. A revised draft, if needed, will be due by April 1. After acceptance of the brochure/essay, payment of the honorarium will be authorized; the brochure will be posted on the asme.org Landmark page sometime thereafter.

Those interested in contracting with ASME to produce one or both of the brochures should submit a letter of interest outlining qualifications and a brief vita to the current chair of the History and Heritage Committee, Terry S. Reynolds (treynold@mtu.edu) before Oct. 1, 2021.

The SIA Newsletter is published quarterly by the Society for Industrial Archeology. It is sent to SIA members, who also receive the Society’s journal, IA, published biannually. The SIA through its publications, conferences, tours, and projects encourages the study, interpretation, and preservation of historically significant industrial sites, structures, artifacts, and technology. By providing a forum for the discussion and exchange of information, the Society advances an awareness and appreciation of the value of preserving our industrial heritage. Annual membership: individual $50; household (joint) $55; full-time student $20; institutional $75; contributing $100; sustaining $150; corporate $500. For members outside of North America, add $10 surface-mailing fee. Send check or money order payable in U.S. funds to the Society for Industrial Archeology to SIA-HQ, Dept. of Social Sciences, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295; (906) 487-1889; email: sia@siahq.org; website: www.sia-web.org.

Mailing date for Vol. 50, No. 3 (Summer 2021), September 2021. ISSN 0160-1067. If you have not received an issue, apply to SIA-HQ (address above) for a replacement copy.

The SIA Newsletter welcomes material and correspondence from members, especially in the form of copy already digested and written! The usefulness and timeliness of the newsletter depends on you, the reader, as an important source of information and opinion.

TO CONTACT THE EDITOR: Marni Blake Walter, Editor, SIA Newsletter, 11 Esty Rd., Westmoreland, NH 03467; sianeditor@siahq.org.
From American Manufacture to “Vintage” on the Internet

Pandora by Design Exhibit

In March of 2021, I visited Manchester, N.H., for the second time since 1987, the year I left my job as head sweater designer for Pandora Industries. The occasion for my visit was the pandemic-delayed opening reception for “Pandora by Design: Sweaters from the Millyard,” an exhibit at Manchester’s Millyard Museum*, which ran through Aug. of 2021.

Arriving at the Manchester Transportation Center, very near Pandora’s former building, I almost expected to see the sign—“Home of PANDORA Sweaters”—still on top of the building, although I knew it had been removed long ago. Now a “green” building and city landmark occupied by the University of N.H., the clock tower’s copper roof has been restored, and solar panels rather than a sign cover the roof of the building.

The exhibit includes the fully restored “Sweaters” portion of the roof-top sign with its trademark blue neon illumination, along with sweaters, sketches, advertising material, photographs of the production process from the collection of the Manchester Historic Assoc., and a short biographical film about Pandora’s May Gruber. At the conclusion of the exhibit, the museum plans for the “sweaters” letters to be relocated, installed, and displayed as a part of its permanent collection.

In early 2020 my work as a sweater technical designer was halted by the Coronavirus pandemic, and I had time to review material I’d accumulated throughout my years at Pandora Industries, 1974 to 1987. Correspondence with Jeffrey Barraclough, Director of Operations for the Manchester Historic Assoc., which operates the Millyard Museum, led to my donation, and I packed boxes of garments I’d designed, swatches of stitches and jacquards, sketches, advertising materials, and other records. Each item was labeled and put into context (as best possible) in the lists I sent to the museum: yarn, knitting machine used, etc. Garments and swatches had been saved as reference materials for later seasons, or, in some cases, because they were “best sellers.” Much of this material was on display in the exhibit.

Pandora Industries began in New York City in the 1930s to produce “junior” (young women’s) sweaters. May Blum Sidore Gruber’s (1912–2013) father had been a partner in several knitting mills; later, May was one of the founders of Pandora Industries alongside her parents and husband. A woman of extraordinary accomplishments, May took over

(continued on page 4)
the company and ran it as president after her first husband, Saul Sidore, died suddenly in 1964. Her book, Pandora’s Pride (Lyle Stuart, 1985), chronicles her story: while raising five children, she worked in the business, often traveling with suitcases of samples to show buyers. In 1940, Pandora moved to one of the former Amoskeag Mfg. Co.’s buildings in Manchester, N.H. In 1950, the company bought what is now known as the “Pandora Building,” which was built in 1850, with the clock tower added later. Manchester had been developed by the so-called “Boston Associates,” who had begun manufacturing textiles in Waltham, Mass., in 1813, and then Lowell, Mass. in 1822. The Amoskeag Mfg. Co. was, at one time, the largest cotton textile producing factory in the U.S. When the Amoskeag company closed in 1936, local business leaders bought the assets, and attempted to bring new industries to the millyard.

Pandora Industries was one of the new arrivals. After its move to Manchester, Pandora became one of the city’s major employers, with up to 1,000 employees, and manufactured up to 60,000 sweaters a week. When the company was sold in 1983 to a subsidiary of Gulf & Western, its’ annual volume was over $40 million. The company closed in 1990. By that time imports from Hong Kong (which had not yet reverted to China) and Taiwan were increasing, a trend that continued and eventually destroyed most of the domestic knitwear industry and garment industry. (One of the garments in the museum exhibit is a red, white, and blue sweater vest with SAVE NEW HAMPSHIRE JOBS on the front, and CONTROL IMPORTS on the back.)

In 1974 I joined Pandora as an assistant sweater designer, based in the company’s design and sales offices in New York’s garment center. Between 1974 and 1987, I traveled to “the mill” in Manchester nearly every week to work with the research and development knitters, sample room, and dyehouse, and to participate in meetings to select styles for the next line, finalize pricing, and then to fit the sweaters that would go into production. Being able to interact directly with the experienced workers was, I think, the best possible way to learn the business. Pandora was then known for sweaters that were color-coordinated with the sportswear pieces manufactured in another of the mill buildings nearby, but new labels and new “looks” were added to the product line over the years.

When I began working there, Pandora used mechanical knitting machinery, both flat and circular. The mechanics punched pasteboard cards (like those used on jacquard weaving looms) that programmed the colors and stitches that would be knit, following colored graphs done by the sweater designers. Later, Pandora bought some of the first computerized knitting machinery in America: Stoll flat machines from Germany. The research and development knitters traveled to Stoll’s offices in Long Island, N.Y. and Germany for training. Paper tapes replaced pasteboard cards, the R&D knitters looked at small green letters on tiny black screens that were the computer monitors then. The computerized equipment helped to speed up set-up time for the machines: less “down time” meant more production.

There were other changes in technology: fax machines enabled us to send sketches and spec sheets (specification sheets, which gave measurements, yarn, and color information) to the mill faster than the company trucks that had brought paperwork and sweater and woven fabric to the design room in New York’s garment center, where sportswear and sweater samples were made. Overnight courier services began and helped speed up the process further.

But by 1987 it was obvious that imports were having a
During more than 70 years of use, a GE 45-ton, center-cab diesel locomotive moved railcars to and from a public utility on the tracks of a common carrier railroad in Washington, D.C. and a factory’s power plants in Hopewell, Va. The locomotive was built for the East Washington Ry. in 1946. It entered the collection of the Old Dominion Chapter (ODC) of the National Railway Historical Society (NRHS) in Richmond, Va. in June of 2020.

The East Washington Ry. was remnant of the Chesapeake Beach Ry. of Maryland and Washington, D.C., which closed in 1935. The 2.9-mi. section known as the East Washington survived for another 40 years or so by providing rail deliv-

(continued on page 6)
eries to a liquor company and transporting coal by rail to the Benning Power Plant. It was here that the 45-tonner helped to usher in a new age of railroading, as steam locomotives were retired soon after the diesel engines arrived, and it continued working on the E-W for many years. When the Benning Power Plant converted to oil, that ended the need for the continued existence of the E-W, and the Ry. closed in 1978.

The locomotive ended up as the plant switcher at Cogentrix Power Plant in Hopewell, Va., and later became the property of AdvanSix Corp. after Cogentrix closed in 2019. AdvanSix generously donated the operable diesel locomotive to the ODC in June 2020. After being loaded onto a trailer, the ODC’s newest piece of rolling stock made the 35-mi. trek to its forever home at Hallsboro yard, the sister facility of the Richmond Railroad Museum.

Many locomotives, like this one, were built expressly for menial service on industrial switching tracks, yet each made its contribution, however great or small, to the larger history of the railroad industry. Their history helps to tell the stories of the industrial companies that operated either small railroads or industrial plant tracks. Indeed, many of the most significant industries in the U.S. and elsewhere had them. Railroad history, through such associations, opens doors to an array of interesting and important facets of a nation’s history in the 20th and early 21st-c. world.

Tyler Tiapin; photos by Dave Coldren

Sometimes even locomotives have to stop at grade crossings! The trip was temporarily delayed by a slow-moving CSX freight.

**NOTES & QUERIES**

New Iron & Steel Email List Created. The Embarrassment of Iron Furnaces tour on the last day of the SIA Annual Conference in Bethlehem, Pa. was a success. While on the bus an enthusiastic group of iron and steel enthusiasts, while going from furnace to furnace, shared bad puns and jokes and, of course, talked a lot about iron and steel.

It was clear from the discussions throughout the day that there’s currently no way for us to easily stay in touch. There was formerly an Ironmasters group, loosely affiliated with SIA, but it became defunct about 20 years ago. Several people expressed interested in making something happen. I volunteered to set up an informal email list for anyone interested in the iron and steel industry, including industrial archeology, preservation, history, education, business history, and labor history.

It’s up now at [https://groups.io/g/Iron-Steel-SIG](https://groups.io/g/Iron-Steel-SIG).

If you have any interest in iron or steel please join us!

Matt Kierstead suggested several other organizations to contact about the mailing list. I’m reaching out to them as well as each SIA chapter. If you have any suggestions for other people or organizations that might have an interest, please get in touch: tmeadow@ferramwest.com, 510-334-8161.

I hope that this is the first step in creating an iron and steel community.

Tony Meadow

Offloading at Hallsboro was fairly simple after a section of panel track was pulled into place.

The 45-tonner is within a final few feet of its new home.
General Interest

◆ Bernard A. Drew [SIA]. Charles H. Ball: Berkshire’s Biggest Smalltown Industrialist. Attic Revivals Pr., Great Barrington, Mass., 2021. 80 pp., 85 illus. $25 paperback, postpaid. Charles H. Ball (1861–1928) fabricated his patented tubular truss highway bridges in a machine shop in East Windsor, Mass., in the 1890s. Four of his bridges survive today. Hard-working and inventive, he also built a mill to manufacture a wide variety of goods, such as paint brush handles, lollipop sticks, and skewers for the meat-packing industry, reviving a faded village. Available only through a village store in Windsor and from the author: 24 Gilmore Ave., Great Barrington, MA, 01230; bddrew@verizon.net.

◆ David Farrier. Footprints: In Search of Future Fossils. Farrar, Straus and Giroux, 2020. 320 pp., $21.99 hardcover, $14.20 paperback. Future IA: explores the industrial, chemical, and geological traces we will leave for the very distant future—whether it is plastic polluting the oceans, nuclear waste sealed within the earth, or the 30 million miles of roads spanning the planet, the remains of our cities will have the potential to reveal much about how we lived in the 21st c.


◆ Christopher C. Fennell [SIA]. The Archaeology of Craft and Industry. Univ. Pr. of Fla., 2021. 230 pp., $95 hardcover. Exploring evidence from textile mills, glassworks, cutlery manufacturers, and tanneries, the author describes the transition from skilled manual work to mechanized production methods, and offers examples of how artisanal skill remained important in many factory contexts. He also traces the distribution and transportation of goods along canals and railroads, and examines lumber, mining, and smelting operations. The book features an in-depth case study of Edgefield, S.C.

◆ TICCIH Bulletin 93 (3rd Quarter, 2021) includes Matthew Bellhouse Moran, report on The Future of Fossil Fuels in Heritage; updates from around the world including Roman Hillmann, Heritage Conservation Center Ruhr; Aishwarya Tipnis, Co-Creating an Industrial Heritage Map of India; Hellen Aziz, Martin Meyer, and Mirhan Damir, Iran/Egypt On-Line Academic Conference; Bartosz Klimas, Warsaw’s Industrial Heritage—On Too Valuable Land; Rafael García García and Angeles Layuno Rosas, Reconsidering INI, The National Institute of Industry; Helen Ashby, TICCIH Africa—A Network for Industrial Heritage; Juan M. Cano Sanchiz, New Academic Center for Industrial Heritage and Archaeology; TICCIH news items; a conference update on the Society for Industrial Archeology 49th Annual Conference from Bode Morin; and reports on research projects, including Judit Malmgren, A Mining Community in Arctic Sweden; Olivia Silva Nerya and Maria Leticia Mazzucchi Ferreira, A Digital Industrial Path Record of Rio Grande; and Sheila Palomares Alarcón, The Industrial Architecture of Bread and Oil.

Textiles

◆ Andrea Richards. The End of the Wonder Rug. NYT (June 5, 2021). www.nytimes.com. The Karastan rug factory in Eden, N.C. is closing down after 93 years. As of March 2021, most of the machines sit silent, including the Axminster looms that from 1928 until 2019 made Karastan’s most famous creation: a worsted
wool rug that so convincingly replicated the design and durability of imported, handmade rugs from the Middle East and Asia that it was called “the wonder rug of America.”

**Iron & Steel**

- Saundra Middleton. *The Pioneering Life of Peter Kirk: From Derbyshire to the Pacific Northwest*. BookBaby, 2021. 318 pp., $19.95 paperback, $4.99 eBook. store.bookbaby.com. Peter Kirk’s Moss Bay Hematite Iron & Steel Co. in Workington, England sold rails around the world, including to railroads linking the transcontinental lines of America and Canada. A dozen inventions fueled his steel mill’s success with new rail products and machines that made production more efficient. In 1886, Kirk traveled to America on a fact-finding mission to start a subsidiary to his enterprise in England. He soon found himself in Seattle, Washington Territory and discovered ample resources and untapped markets, as well as many challenges. Continuing his family’s 100-year history in the iron industry, he founded the town of Kirkland, Wash., to build a new steel works there.

**Mines & Mining**


- Alasdair Lane. *How Flooded Coal Mines Could Heat Homes*. BBC.com (July 6, 2021). A quarter of the U.K.’s homes sit above abandoned coal mines, long since flooded with water. Now, the mines are being put to a new, zero-carbon use: a move toward heating homes and public buildings with geothermal energy from the ruins of former extractive industries. (In an email discussion, Fred Quivik [SIA] reports that, in a similar effort, at a research campus at Michigan Tech [home of SIA HQ] one of the buildings is heated and cooled using a heat pump and mine water.)

- No author named. *Preserving Mining History Brick by Brick*. American Spirit (Jan./Feb. 2021), p. 8. Lisa and Greg Jayne, together with dozens of other volunteers with the Comstock Foundation, have worked on several projects to restore parts of the Donovan Mill in Silver City, Nev. (Tour stop—SIA 2019 Fall Tour, Reno, Nev.). Work included restoring an 1860s stone foundation and helping to rebuild a crumbling furnace that dated to the 1890s.

**Water Transport**


**Railroads**

- Ian Logan and Jonathan Glancey. Foreword by Norman Foster. *Logomotive: Railroad Graphics and the American Dream*. Sheldrake Pr., 2021. 272 pp., photos. $55 hardcover. Author Ian Logan, a designer of fabrics, tin, and enamelware, was fascinated by the typography and graphics of the RR companies. In the 1960s and 1970s he made scores of journeys recording the insignia, logos, slogans, and livery of U.S. RR companies. Logan’s photographs record lines such as the Santa Fe, the Union Pacific, and the Kansas City Southern. One of his journeys is presented as a travelogue, while animal motifs, Native American allusions, advertising slogans, and names of famous trains such as the Super Chief and the Wabash Cannonball provide the subject matter for other features. When Logan embarked on his journeys the passenger railway system was declining; construction workers were demolishing the Southern Pacific RR depot in San Francisco while he photographed it. In the accompanying text, design commentator Jonathan

**CONTRIBUTORS TO THIS ISSUE**


*With Thanks.*
Glancey explores the distinctive visual language of the U.S. railroads.

**TT Vol. 33, No. 1 (Spring 2021) includes Stephen Kelly and Bruce Bowie, *The Mount Union Transfer Shed*; and Lee Rainey, *PPR Freight Shed*; both provide thorough documentation of structures along the East Broad Top (Pa.).

**Agriculture & Food Processing**

- Karen Mellott-Foshier. *How It Started, How It’s Going: Land O’Lakes Celebrates Ten Decades of Innovation*. *Ramsey County History* (Summer 2021), pp. 1–11. Begun in 1921 to market sweet cream butter and obtain better prices for its farmers, Land O’Lakes is celebrating its 100th anniversary. This 100-percent farmer-owned, Minnesota-based cooperative has gone on to support its farmers in many ways and to offer a wide range of products to markets around the globe.

- Kim Metzgar. *St. Vincent's Gristmill*. OMN (Summer 2021), pp. 10–11. The mill associated with St. Vincent abbey and seminary, located about 40 miles east of Pittsburgh, has been in operation since 1854. Flour is still used to make loaves of bread for the monks and students.

**Buildings & Structures**

- Mario Baggio. *Preserving Our Infrastructure by Using Modified Silica Gel*. *Aspire: The Concrete Bridge Magazine* (Summer 2021), pp. 35–37. This waterproofing and protective treatment for older concrete is promoted as clear and colorless, offering advantages over other commonly used systems. It has found successful uses with historic concrete buildings and bridges over the past two decades.

- Heather Greenwood Davis. *Niagara's Latest Attraction Adds a Jolt to Local Tourism*. *The Globe and Mail* (May 19, 2021), pp. A14; [www.theglobeandmail.com](http://www.theglobeandmail.com). The newly restored, 115-year-old Niagara Parks Power Station opened in July to visitors. Exhibits on the history and engineering of the former Canadian Niagara Power Co. generating station (the “cathedral of power”), as well as hands-on opportunities, are on view in Generator Hall, and additional experiences are planned such as the “tailrace tunnel experience.” See note in “Sites & Structures” in this issue.

- Joe Sugarman. *Style & Substance, A Pair of Shabby Industrial Buildings in Buffalo, New York, Becomes a Polished Launching Pad for Food Entrepreneurs*. *Preservation* (Spring 2021), pp. 18–27. Investment in the abandoned Double Truss Cornice Brake Co. and the Jewett Refrigerator Co. factories is revitalizing the Chandler St. neighborhood. Key to success has been financing from the National Trust Community Investment Corp., as well as federal historic preservation tax credits, and a willingness to outfit the buildings with the infrastructure and equipment that small food start-ups need but often can’t afford. For example, a food-grade clear acrylic was applied to every exposed brick and wood surface to prevent any future issues with mold, mildew, or flaking. This treatment met FDA and health department requirements while still managing to keep the factories’ historic architectural character.

- Vittoria Traverso. *Is This the End of Italy's Iconic Valley of the Mills?*. *Atlas Obscura* (Mar. 10, 2021). [www.atlasobscura.com](http://www.atlasobscura.com). In Sorrento, Italy, the deep gorge known as the “Valley of the Mills” is home to a six-story mill building that was abandoned in the early 20th c., and later covered in layers of lush, dense vegetation. After becoming Instagram-famous in 2014, it has been subject to controversial restorations and increased tourism.

- Adriana Valentina. *Niagara Falls State Park to Build $46 Million Visitor Center*. *New York Construction Report* (Apr. 29, 2021). A new facility will replace a 35-year-old structure that is no longer capable of hosting the 9 million visitors a year the park receives. An interpretive museum in the visitors’ center will display a variety of exhibits, including industrial history.

**Bridges**

- John Conway. *The Upper Delaware’s First Suspension Bridge*. *New York Almanac* (July 18, 2021). [www.newyorkalmanack.com](http://www.newyorkalmanack.com). John A. Roebling was too busy to take on the project to design the Shohola bridge, but did consult with Chauncey Thomas of the Barryville [N.Y.] and Shohola [Pa.] Bridge Co. which built the first suspension supported vehicular bridge over the Delaware River.

- *Covered Bridge Topics*, Vol. LXXIX, No. 2 (Spring 2021) includes *Bath Village Bridge* (a lengthy feature article summarizing the New Hampshire bridge’s history with a particular focus on alterations and speculation on the name of its builder) and Scott Wagner, *Peter Paddleford: Bridge Builder and Inventor* (the regionally important mid-19th-c., northern New England covered bridge builder is considered in light of the scarce information about his background). *CBT*, Vol. LXXIX, No. 3 (Summer 2021) includes Scott Wagner, *Dalton or Joppa Road Bridge: Truss Design Observations* (the bridge located in Warner, N.H. has unusual features that resemble the Long and Childs truss patents) and Jan Lewandoski, *Natural Knees in Covered Bridges* (retrofitting the corner bracing of wood truss bridges with natural wood knees as a sympathetic strengthening measure that also adds protection against impacts from overheight vehicles).

- Melissa C. Jurgensen. *156 Year Old Beech Fork Covered Bridge in Washington County, Kentucky Lost to Fire, Arson Suspected*. *CBT* (Summer 2021),
pp. 8–9. The Burr arch-truss bridge, which underwent restoration in 2018, was set on fire on March 9, 2021, resulting in a total loss. The two-span bridge was built in 1865 for the Springfield & Chaplin Turnpike.

❤ Nick Nemec. Preserving Historic Arches While Replacing the Superstructure. *Aspire: The Concrete Bridge Magazine* (Spring 2021), pp. 26–28. The San Antonio Street Bridge over the Comal River in New Braunfels, Tex., a five-span, open-spandrel, concrete-arch bridge of 1923, was rehabilitated in 2019–20. The project found that the concrete of the arches had higher strength than specified in the original plans, allowing for them to be repaired; however, the entire deck system above was replaced with precast, prestressed, concrete box beams with a wider deck. The new deck was keyed into precast concrete frames added to the arch bases.

❤ Christine Podas-Larson. The Aesthetics of Bridge Design: A Paeon to Two of St. Paul’s Elegant Bridges. *Ramsey County History* (Summer 2021), pp. 17–30. A close look at two bridges located in public parks, the South Channel Bridge in Phalen Park and the Montreal Bridge in Highland Park, both in St. Paul, Minn. Details of political decision-making that brought the bridges into being as well as design features are discussed.

**Water Control & Reclamation**


**Power Generation**

❤ Windmillers’ Gazette. Vol. 40, No. 2 (Spring 2021) includes Christopher Gillis, Twiford’s Windmill Billboards and Wooden Windmill Tower Care; T. Lindsay Baker, Illinois-Made New Era Windmills from McDaniel & Son; tributes for James C. Koch and Donald W. Lawrence; and other news and notes. Avail: $20/yr., published quarterly. Christopher Gillis, Editor, P.O. Box 788, Buckeystown, MD, 21717; www.windmillersgazette.org.

**Misc. Industries**


❤ Sarah Kuta. How a Railroad Engineer From Nebraska Invented the World’s First Ski Chairlift. The Invention of the Ski Chairlift. www.smithsonianmag.com. (Feb. 2, 2021). In the 1930s, Union Pacific developed the first resort-style ski area in the U.S. to help boost passenger rail travel. Sun Valley Resort in Idaho opened in Dec. 1936, with the world’s first chairlifts, designed by Union Pacific engineer James Curran. The chairlifts made the sport accessible to casual skiers and increased the number of skiers transported up the mountain. Includes history of lift types, photos, and patent drawings.


**Abbreviations**

CBT = Covered Bridge Topics, published by the National Society for the Preservation of Covered Bridges

CHSA = Construction History Society of America

NYT = New York Times


TT = Timber Transfer. Published by Friends of the East Broad Top. Avail. with membership. $30/yr. www.febt.org.

WSJ = Wall Street Journal

**Publications of Interest** are compiled from books, articles, and digital media brought to our attention by you, the reader. SIA members are encouraged to send citations of new and recent books, articles, CDs, DVDs, etc., especially those in their own areas of interest and those obscure titles that may not be known to other SIA members. Publications of Interest, c/o Marni Blake Walter, Editor, SIA Newsletter, 11 Esty Rd., Westmoreland, NH 03467; sianeditor@siahq.org.
A dedication ceremony was held Fri., June 4, 2021 for the Dam Gate Outdoor Industrial Sculpture at Trout Run Park in Decorah, Iowa. The exhibit is a one-of-a-kind display preserving the last remaining of the Tainter gates that the Upper Iowa Power Co. installed in the early 1900s at the Lower Dam on the Upper Iowa River. The Tainter gate is a type of radial-arm floodgate used in dams and canal locks to control water flow, designed by Wisconsin-born Jeremiah Burnham Tainter in 1886. Already a popular stop for walkers and cyclists, the exhibit includes interpretive signage that tells the story of the Lower Dam and the significance of small community-driven hydropower dams that once dotted the rural landscape of Northeast Iowa.

The Lower and Upper Dams were shut down in 1958, but the dam sites continued to be used for recreation until recently. Flooding in 2008 caused major damage to the Lower Dam, resulting in a change in the river's course. In Jan. 2020, the Iowa Dept. of Natural Resources (DNR) undertook an emergency project at the Lower Dam site which removed the remaining three dam gates from the site. At that time the DNR reached out to the Winneshiek County Historic Preservation Commission (WCHPC) requesting the commission’s involvement in preserving the last remaining dam gate from being turned into scrap metal. WCHPC collaborated with the Iowa DNR, Decorah Parks and Recreation, and the Winneshiek County Historical Society to preserve the dam gate through the creation of the outdoor exhibit now available to the public. The SIA supported the effort with a letter of endorsement (from then-president Christopher Marston) for the WCHPC’s grant application.

During the event, Iowa DNR Director Kayla Lyon, Iowa Dept. of Cultural Affairs Director Chris Kramer, Iowa DNR River Programs Coordinator Nate Hoogeveen, and Winneshiek County Development and Tourism Director Stephanie Fromm spoke to a crowd of three dozen people who gathered to mark the dedication of the exhibit. The dam gate joins the historic Freeport Bridge, a 156-ft.-long, bow-string arch bridge constructed in 1879 and now also located in the park.

Steven Johnson

Supporters gather at the dam gate for the dedication ceremony.

Remains of the last Tainter dam gate from the Lower Dam on the Upper Iowa River, displayed at Trout Run Park, Decorah, Iowa.

Interpretive panel displaying historical and technical information about the Lower Dam and Tainter gate.
The Bachelor-Commodore Mine Complex, a historic mining district in Mineral County, Colo., was listed in the National Register of Historic Places on July 29, 2021. The history and significance of the complex relate to the early silver bonanzas of the 1890s in the area, which continued into base metal extraction during WWII. The mine closed in 1976 and in 2008–2010 underwent Environmental Protection Agency surveys, assessments, and cleanup efforts. The listing is complex and varied, consisting of approximately 40 contributing and non-contributing resources. It includes hardrock tunnel mine features that have high levels of integrity and are representative of the period from 1891–1971.

Maxon Mills, Wassaic Project Receives Grant to Complete Building Condition Report.
A defining feature of the rural hamlet of Wassaic, Maxon Mills enjoyed a brief existence as a grain mill during the post-WWII decline of Dutchess County’s dairy industry. Since 2008, the Wassaic Project, comprised of artists with roots in northeast Dutchess County on a mission to use art and arts education to foster positive social change, has transformed the seven-story granary to use as an exhibition space and to house Art Nest, a free drop-in space for local children. In 2020, the organization purchased the building and received an $8,160 grant from the Preservation League of NYS to hire Marilyn Kaplan of Preservation Architecture to conduct a Building Condition Report of Maxon Mills. This report will allow the Wassaic Project to prioritize renovations, repairs, and upgrades, and better understand options for accessibility plans.—Preservation League of NYS (July 26, 2021), https://www.preservenys.org/blog/preserve-new-york-grants-2021.

Niagara Parks Power Station Now Open for Visitors.
The first major power plant on the Canadian side of Niagara Falls, the Canadian Niagara Power Co. generating station (Tour stop, 1992 Annual Conference, Buffalo, N.Y.) was recently renovated and is now open to the public. The plant was completed in 1905 to produce hydroelectricity from the power of the Niagara River. The above-ground Generator Hall, where tourists now begin their visit, is an impressive 173.7-m-long, 18.3-m-tall, Romanesque-style hall atop the Canadian Horseshoe Falls. It houses 11 alternating current, 25-Hz. generators, which each produced 10,000 horsepower until the plant was decommissioned in 2006. Beyond the hall, the power station was one of the first in the world to undertake a major tunnel project, with water entering through the forebay and dropping 180 ft. before being expelled into a 2,000-ft. tunnel that emptied at the base of the Horseshoe Falls. According to the Niagara Parks website “artifacts, interactive exhibits, and interpretative installations offer a first-hand look at how this hydropower pioneer harnessed the power of water to generate electricity for 100 years,” with more exhibits being planned for next year. The site includes an illustrated essay on the station’s construction: www.niagaraparks.com/things-to-do/building-the-power-station. See also the Toronto Globe and Mail, May 19, 2021: www.theglobeandmail.com.—Phyllis Rose; Brian Gallaugher

UNESCO Added Four Industrial-Themed Sites to the World Heritage List during the 44th Session of the World Heritage Committee, July 2021.

Cordouan Lighthouse, France stands on a shallow rocky plateau in the Atlantic Ocean at the mouth of the Gironde estuary. Built in white limestone dressed blocks at the turn of the 16th and 17th c., it was designed by engineer Louis de Foix and remodeled by engineer Joseph Teulère in the late 18th c. A masterpiece of maritime signaling, Cordouan’s... (continued on page 13)
monumental tower is decorated with pilasters, columns, modillions, and gargoyles. It embodies the great stages of the architectural and technological history of lighthouses.

Rosia Montana Mining Landscape, Romania is located in the Metalliferous range of the Apuseni Mountains in the west of Romania, and features the most significant, extensive, and technically diverse underground Roman gold-mining complex known today. Over 166 years starting in 106 C.E., the Romans extracted some 500 tons of gold from the site, developing highly engineered works, different types of galleries totaling 7 km, and a number of waterwheels in four underground localities chosen for their high-grade ore.

The Slate Landscape of Northwest Wales, U.K. illustrates the transformation that industrial slate quarrying and mining brought about in the traditional rural environment of the mountains and valleys of the Snowdon massif. The property comprises six components each encompassing relic quarries and mines, archeological sites related to slate industrial processing, historical settlements, both living and relic, historic gardens and grand country houses, ports, harbors and quays, and railway and road systems illustrating the functional and social linkages of the relic slate industrial landscape.

The Trans-Iranian Railway, Iran connects the Caspian Sea in the northeast with the Persian Gulf in the southwest, crossing two mountain ranges as well as rivers, highlands, forests and plains, and four different climatic areas. Started in 1927 and completed in 1938, the 1,394-km-long Ry. is notable for its scale and the engineering works it required to overcome steep routes and other difficulties. Its construction involved extensive mountain cutting in some areas, while the rugged terrain in others dictated the construction of 174 large bridges, 186 small bridges, and 224 tunnels, including 11 spiral tunnels.

On Fri. May 21, the Northern Ohio Chapter (NOCSIA) met for a day-long tour of the Battery Park neighborhood, which lies two miles west of Downtown Cleveland on a bluff overlooking Lake Erie. The meeting began with a talk by activist and neighborhood historian Jim Cutrone, about redevelopment and gentrification of the area, where he has resided for decades. Many cities have Battery Parks named after batteries of cannon that once defended a harbor, but Cleveland’s Battery Park is named after a Union Carbide factory that made Eveready batteries. That factory ceased operating in 1999, and the site was recently redeveloped into upscale condos and apartments. Since the 1890s, this neighborhood contained large and small factories interspersed with modest worker housing and a few pubs. Now the factories are gradually giving way to residential and service-industry redevelopment, and home prices are ten times what they were three or four decades ago. In the morning, the NOCSIA group toured the Shoreway, a former factory that was recently converted to luxury loft apartments with spectacular views of Lake Erie and Downtown Cleveland. After that, a picnic lunch was eaten in a pavilion at Edgewater Beach, which connects to the Shoreway apartment building via pedestrian tunnels under a roadway and a railway. Chapter officers were elected to new terms: Ron Petrie, President; Mary Starbuck, Vice President; Guy Marentette, Secretary; and Steve Titchenal, Treasurer. After lunch, participants hiked around the Battery Park neighborhood and toured two operating factories: Universal Grinding, a contract parts supplier and producer of specialized hand tools; and LAND, a company that designs and manufactures electric motorcycles.

Ron Petrie

After 16 months since their last Chapter program (the 35th Annual Dinner Meeting held in Jan. 2020), the Oliver Evans Chapter resumed events with a virtual presentation on June 2. Chapter member Joel Spivak spoke about Philadelphia’s railroad history. He is co-author with Allen Myers of Philadelphia Railroads (Arcadia Pub., 2010), a tribute to Oliver Evans, the inventor of the American high pressure steam engine.
The Construction History Society of America’s Webinar Series 2020–2021, “...and Other Tales of Construction History” ([www.youtube.com](http://www.youtube.com), search on “tales of construction history”). Pandemic-inspired webinars on various topics, including metals through time, brick by brick, and Quaranta Giorni.

**Historic Bridges of the Adirondacks** ([https://www.youtube.com/watch?v=A9ecILlIEAY](https://www.youtube.com/watch?v=A9ecILlIEAY)). Nice presentation by Adirondack Architectural Heritage Executive Director Steven Engelhart on historic bridges of the Adirondacks. He covers the principal bridges of interest—including stone arch, covered, iron truss, reinforced concrete, stone-faced, and steel arch bridges—and successful bridge rehabilitation efforts, as well as bridges that have been lost, particularly the Lake Champlain Bridge.


**A Piece of Nevada Mining History: The Next Stage Of Preservation** ([www.youtube.com](http://www.youtube.com), search on “Nevada mining history preservation”). Over 150 years after the discovery of the Comstock Lode led to a silver mining boom in Virginia City, Nev., the Comstock Foundation of History & Culture continues with ongoing preservation work of the Donovan Mill (Tour stop—SIA 2019 Fall Tour, Reno, Nev.).

**Rail Archive** ([www.railarchive.net](http://www.railarchive.net)). Extensive collection of many types of RR photos, along with historical documents such as travel booklets, documents from the Chicago World’s Fair “Century of Progress,” and many other topics, assembled by Richard Leonard.

**A River, a Family, and a Shipyard: The History of the Howard Family of Steamboat Builders** ([https://www.youtube.com/watch?v=INgUELhrNVO](https://www.youtube.com/watch?v=INgUELhrNVO)). Story of the Howard Shipyard and the family that carried it through generations in Jeffersonville, Ind. By 1890 this shipyard had built half of the steamboats on the western rivers.

**IA on the Web** is compiled from sites brought to the editor’s attention by members, who are encouraged to submit their IA Web finds: sianeditor@siahq.org.
negative effect on Pandora’s business. I needed a job and left the company, working in the shrinking domestic sweater market for another decade before moving from the creative end of the business to the production end, becoming a “technical designer.” My hands-on training at Pandora Industries helped me to make the transition. Working with factories in China via email and digital photographs, a technical designer communicates comments about fit and appearance of sweater samples, generates spec sheets for production, and is involved in quality control of production.

It’s a rather odd feeling to see Pandora sweaters that I designed selling as “Vintage” on the Internet these days.

When I began traveling to the mill, I wondered about the date “1850” displayed on the clock tower of the building and began questioning co-workers. They told me about “the Amoskeag,” the mill yard, power canals filled in, buildings demolished, etc. A fascination with the history of the textile industry, especially in New England, resulted, and I found Ted Sande’s book Industrial Archaeology: A New Look at the American Heritage (Penguin, 1978), which mentioned the Society for Industrial Archeology. I immediately wrote (in those long-ago days before email) to inquire about that organization, and I’ve been a member ever since.

Although the Amoskeag mill yard has lost many buildings through the years, and canals that supplied waterpower have been filled in, the lines of red brick factory buildings and former corporation housing on both sides of the Merrimack River are still very impressive. The Millyard Museum occupies space in one of the former mill buildings. Just inside the building’s entrance, a section of one of the penstocks that brought water from canals to power machinery is visible. A series of exhibits traces Native American settlements, the origins of Manchester as a planned industrial city, and the various industries, from textiles and shoes to high-tech, that were located in the Manchester area. Two Amoskeag steam fire engines are on display; a history of the Amoskeag locomotive works is given, although the museum houses no examples of those. Former businesses of Manchester’s main street, Elm Street, are chronicled with photos and artifacts, and the city’s 21st-c. businesses are also represented.

A walk through the historic mill yard, past former company housing, up to Elm St., and the city’s 1845 Gothic Revival City Hall, should accompany a visit to the Millyard Museum.

Thanks to Jeffrey Barraclough for all his help, and to Manchester Historic Association Executive Director John Clayton, and lead curator Kristy Ellsworth, for their help and their hospitality during my visit to the Millyard Museum.

Suzanne Wray

* The former Amoskeag Mfg. Co.’s mill yard is known as “the millyard,” a spelling apparently only used for this site, others being termed “mill yard.” Aurore Eaton, in her book The Amoskeag Manufacturing Company, A History of Enterprise on the Merrimack River (The History Pr., Charlestown, S.C., 2015), makes this point.

Several items, designed by the author, on display in the exhibit. Left, pointelle pullover on dress form, with photo of a twin set in same fabric shown on the wall behind. Middle, pointelle pullover from a mechanical flat machine. This fabric, in various styles, kept those machines busy for 3 shifts daily for a long time. Right, jacquard cardigan on dress form. Just visible to the upper left is magazine advertising showing that style; the small black & white photo is advertising from Lane Bryant.
CALENDAR

Please be advised to confirm all events and dates due to the coronavirus pandemic. All information was current, as best as could be determined, at the time of publication.

2021

Oct. 16: 2021 Tide Mill Conference, Portland, Maine, or Online. In person at the Univ. of Southern Maine from 10 a.m. to 2 p.m. ET, or join online via Zoom for the presentations (10 a.m. to 12 p.m. ET). Info: www.tidemillinstitute.org.


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