

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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PENNSYLVANIA SHIPYARDS REDEVELOPMENT & REPRIEVE

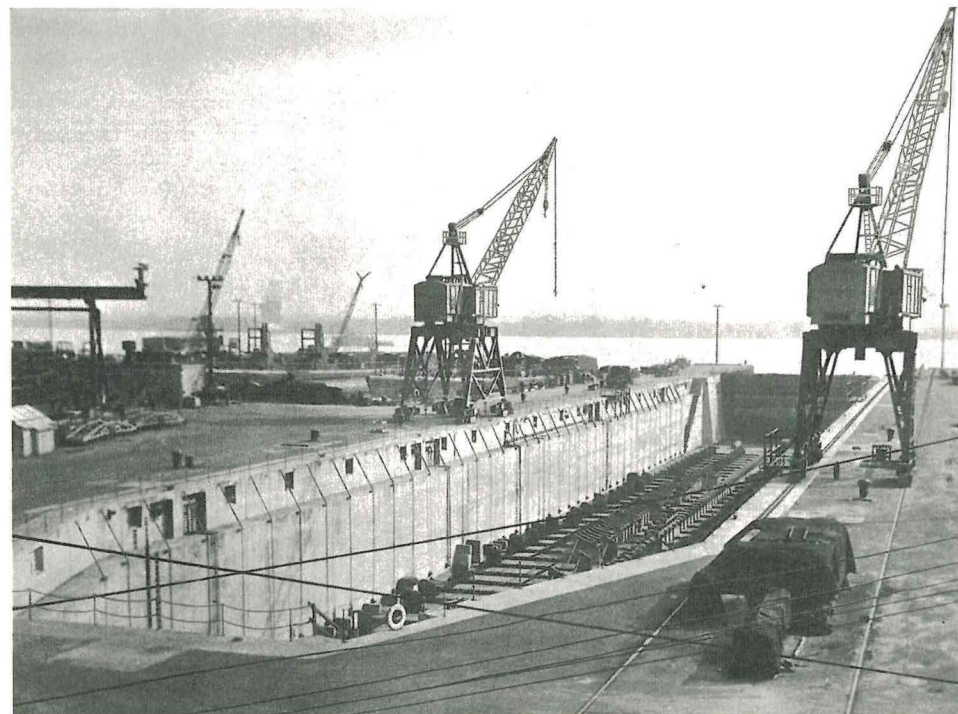
Many SIA members are familiar with plans to redevelop Bethlehem Steel as a casino and museum (SIAN, Winter 2005; tour site—2002 Fall Tour). Less well known is that other industrial sites throughout Pennsylvania have been selected or proposed for redevelopment due to the state's new gaming laws. Among them are two historic shipyards on the Delaware River—Sun Shipbuilding and Cramp.

In an effort to provide property tax relief, the Commonwealth of Pennsylvania consummated the Race Horse Development & Gaming Act of 2004. The act provides for slot machines at new and existing racetracks, and at new stand-alone slot parlors. Along the Delaware River waterfront in Chester, a race-

track-casino has now obscured the original portion of what later became the largest tanker shipyard in the world. In Philadelphia, plans were recently nixed for a casino, where construction would have impacted the site of one of the most historic of all American shipyards.

The shipbuilding industry along the Delaware River in Pennsylvania and New Jersey was so expansive and so vital that the U.S. Shipping Board, Emergency Fleet Corp., relocated its headquarters from Washington, D.C., to Philadelphia in 1918. One of the shipyards established during WWI was that of the Sun Shipbuilding & Dry Dock Co., located in Chester. The original yard, constructed in 1916, consisted of five shipways and two wet basins. Established by Sun Oil Co., Sun Ship was a natural propo-

(continued on page 2)



CSCo Information booklet, 1944

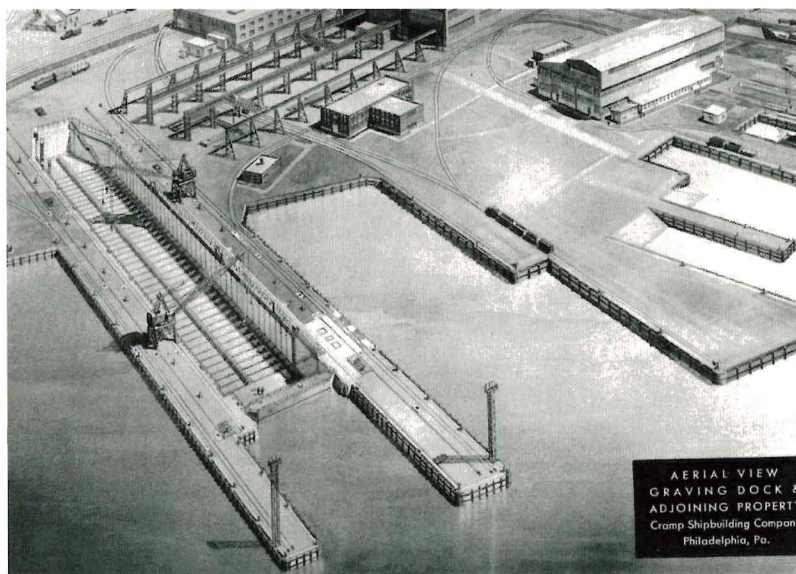
Graving dock (1943). Cramp Shipbuilding Co., Philadelphia.

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nent of the marine diesel engine, and held exclusive rights in the U.S. to build the opposed-piston oil engine patented by William Doxford & Sons, Ltd. The first steam ship to be retrofitted with the Sun-Doxford engine was the tanker *Miller County* in 1923; conversion took three months. Sun's technological innovations also included the use of welds in place of rivets. Sun built the first all-welded, sea-going tanker (*White Flash*), which was delivered to the Atlantic Refining Co. in 1931.

During WWII, Sun built 198 of the 481 all-welded T2-SE-A1 tankers, including the first of the class (*Gettysburg*, delivered to the U.S. Maritime Commission in 1942). By the end of the war, Sun had 28 shipways and was the largest tanker shipyard in the world. Out-of-the-ordinary contracts before and after WWII included three minesweepers for the U.S. Navy (*Widgeon*, *Teal*, and *Brant*), delivered in 1918; two passenger ferries (*Millville* and *Haddonfield*) for the Pennsylvania RR in 1922; a supply ship (*Dickinson*) for the Commercial Pacific Cable Co. in 1923; and six "seatrains" ships delivered to Seatrain Lines, Inc. in 1932, 1940, and 1951. *Seatrains* New



Artist's rendering of Cramp's graving dock. Source: Cramp Shipbuilding Co. information booklet, 1944.

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; couple \$55; full-time student \$20; institutional \$50; 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; e-mail: SIA@mtu.edu; Website: www.sia-web.org.

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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: Patrick Harshbarger, Editor, *SIA Newsletter*, 305 Rodman Road, Wilmington, DE 19809; (302) 764-7464; e-mail: phsianews@aol.com.

York and the remainder of her class were not mere car floats; each vessel was a true enclosed ship that held 100 railroad cars.

In 1969, Sun fitted the tanker *Manhattan* for icebreaking in the Humble Oil & Refining Co.'s effort to demonstrate that the Northwest Passage was a viable route for North Slope crude oil. *Manhattan* succeeded but experienced considerable difficulty; for this and other reasons, the idea was abandoned—hence the Trans-Alaska Pipeline. In 1973, Sun delivered *Hughes Glomar Explorer*, which is listed on the Sun roster as a "Deep Ocean Mining" ship owned by Summa Corp. Ostensibly built to collect manganese nodules from the sea floor, *Hughes Glomar Explorer* was actually built for the CIA specifically for the purpose of salvaging a sunken Soviet ballistic missile submarine, most of which fell back to the bottom while being raised in 1974.

Sun's last ship was delivered in 1977, and the property was sold in 1982. The ill-fated Pennsylvania Shipbuilding Co. occupied the original yard during the middle and late 1980s, but failed to complete its government contracts for oilers. Metro Machine planned to build double-hull tankers after Penn Ship's demise, pursuant to the Oil Pollution Act of 1990 that followed the *Exxon Valdez* disaster of 1989. (During the early 1990s, the author performed environmental assessment work for Metro Machine at the shipyard of 1916, and enjoyed a fascinating opportunity to explore the facilities.) Metro Machine retrieved Sun's floating dry dock and performed some ship repair work at Chester, but no new ships were built.

On September 10, 2006, the Chester Downs track of Harrah's Chester Casino & Racetrack opened at the site of the Sun shipyard of 1916. Portions of the two wet basins

2007 SIA Annual Conference—Philly

MARK YOUR CALENDARS!

Annual Conference, Philadelphia, PA, June 7-10. The Oliver Evans Chapter will welcome the national SIA for its 36th Annual Conference. The hotel is the Crown Plaza at 18th and Market streets in the heart of downtown. Tours are tentatively planned for Philadelphia's streetcar system, bridges, breweries, architecture, and historic industrial sites and processes, including a banquet at the Fairmount Waterworks. Additionally, there will be a guided cruise of the Delaware River. Tours will branch out to New Jersey for industrial sites in Camden, as well as a tour of the town of Roebling and the new light-rail system that runs between Camden and Trenton. Also planned is an exclusive behind-the-scenes look at the industrial records archived in Philadelphia's prestigious libraries and learned societies.

Registration materials and more detailed information on will be mailed to members in April. Updates will also be posted at the SIA Web site: www.sia-web.org.

Student Travel Scholarships. The SIA awards travel scholarships to help full-time students and professionals with less than three years of full-time experience to attend annual conferences. Those interested in applying for a travel scholarship to attend the annual conference in Philadelphia should submit a concise letter outlining



HAER PA-51, Jack Boucher

Philadelphia's Fairmount Waterworks will be the site for the Saturday-evening banquet at the SIA's 36th Annual Conference.

their demonstrated interest in and commitment to industrial archeology or a related field, and one letter of reference. **Deadline for applications is Apr. 1.** Info: Patrick Harshbarger, SIA Scholarships, 305 Rodman Rd., Wilmington, DE; (302) 764-7464; phsianews@aol.com. Notice of awards will be made by May 1. ■

remain, but the buildings have been removed and the shipways have been obscured. Structures associated with the shipyard expansion of WWII remain at the adjoining property now operated by Penn Terminals, Inc.

When it closed in 1927, the William Cramp & Sons Ship & Engine Building Co., located on the Delaware in Philadelphia, had been the oldest extant American shipbuilder, having begun operations in 1830. Cramp was also a shipbuilder of stature in terms of the many types of vessels the company built, and in terms of clientele.

Cramp built many commercial vessels, ranging from clipper ships (including *Morning Light*, built in 1853 for the California trade) to the great steel passenger liners *St. Louis*, *St. Paul*, *Finland*, *Kroonland*, *Great Northern*, and *Northern Pacific*, all of which saw service as troopships during WWI. *St. Louis* and *St. Paul* were the largest ships yet built in America. Even larger were *Finland* (torpedoed October 28,

1917) and *Kroonland*. *Northern Pacific* grounded on Long Island on January 1, 1919.

Cramp was also skilled in ship conversion work. A survey of ships under construction upon America's entry into WWI identified only two vessels that were especially suitable for conversion to troopships—*Orizaba* and *Oriente* (the latter renamed *Siboney*), both nearing completion at Cramp's. These sister ships transported a total of 102,618 personnel to and from Europe in 1918 and 1919. Sailing together, they not only survived an encounter with a U-boat (August 21, 1918), but *Orizaba* attempted to ram it.

Cramp excelled in building warships. Cramp began building ships for the U.S. Navy in 1862, with the iron-clad broadside *New Ironsides*, and went on to build the single- and double-turreted iron monitors *Yazoo* and *Terror* (keels laid in 1863 and 1874, respectively). A notable ship built for the U.S. Navy was the dynamite cruiser *Vesuvius* (keel laid in 1887), which used pneumatic force to propel charges of dynamite and gun cotton. Powder exploded in the first of three 15-in.-diameter tubes, compressed the air in the

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The Great Dry Docks at Erie Basin

As of October, 2006, Graving Dock No. 1 is the only structure still standing to remind us of the mighty Todd Shipyards' birthplace in Erie Basin, the terminal for the Erie Canal in the Red Hook neighborhood of Brooklyn. All the shipyard buildings have been demolished as part of site development for an IKEA store. Once one of the largest dry docks in the world, it is a symbol of Red Hook's long maritime history.

The Roebling Chapter of the SIA has participated in efforts to preserve the shipyard structures. A coalition of advocates was formed under the name "Save the Graving Dock Committee" in 2004, shortly before the first demolition began.

Demolition of the 1867 pumphouse was initiated in late 2004. Advocates called a press conference since a full assessment of historic resources had not been completed. Preliminary findings identified several structures as eligible for the National Register of Historic Places. Extensive asbestos was not disclosed in the "alterations" permit application; contractors were cited and fined and the demolition was halted, but only temporarily.

Letters, press conferences, a postcard campaign, architect-designed alternative plans, an exhibition, and panel discussions have since been employed to try to save the graving dock. The Preservation League of NY State added the dock to its "Seven to Save" list in 2005. But to no avail; as of this past summer, all of the buildings were gone and evidence of the construction of a retaining wall in the graving dock had been observed. This is preparatory to filling the dock for the store's planned parking lot.

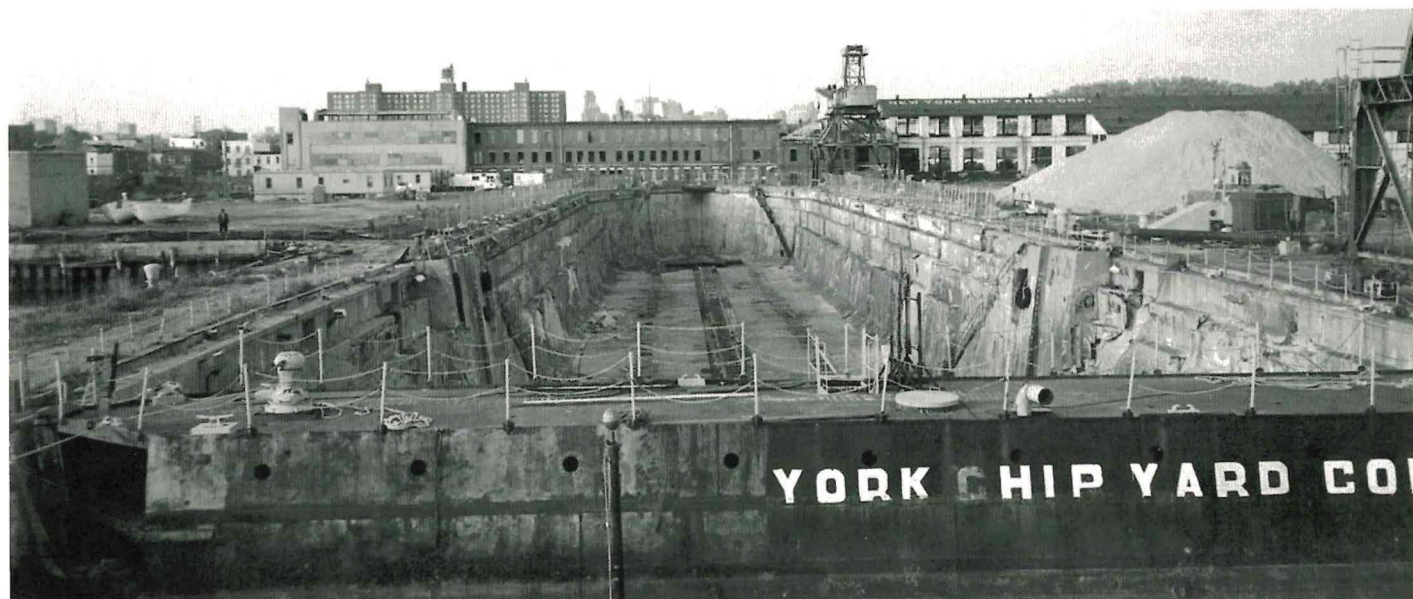
The Army Corps of Engineers has stipulated several conditions that IKEA must meet before the graving dock is filled. These include removing two sunken floating dry

docks and avoiding any impact upon the buried Graving Dock No. 2 and the 1867 pumps believed to still lie below the pumphouse location. The Corps has issued a permit for bulkhead repair and dredging at the site. In its review, it narrowly drew the Area of Potential Effect to exclude all of the buildings and Graving Dock No. 1.

The Municipal Art Society, which, through its Metropolitan Waterfront Alliance, championed the graving dock almost from the beginning by testifying before city agencies, has now filed a lawsuit against the Corps, claiming that it did not properly apply Section 106 of the National Historic Preservation Act to the proposed project. The NHPA requires that a government agency providing funds or permits to a project must examine the impact of that project upon all historic resources affected. The outcome of this case is yet to be determined.

With the building and expansion of the Erie Canal in 1825 and associated development of the Atlantic and Erie Basins in the 1840s and 1850s, Red Hook was transformed into a major shipping and warehousing center. It also became an important ship repair area. The Erie Basin Dock Co. bought land there for a shipyard in 1864, undoubtedly hoping to take advantage of the wartime boom in shipbuilding.

During and just after the Civil War, a steady decline in shipbuilding in the New York area soon began. Several causes have been blamed, including a postwar glut of surplus military ships; the move of wooden shipbuilding to Maine, where timber was cheaper; the rise of iron shipbuilding, which was centered on the Delaware River; subsidized foreign steamer lines between Europe and New York, which annihilated American-European lines; as well as increased real estate values and high labor costs in both Brooklyn and Manhattan. By 1882, there were ten shipyards in Brooklyn



Graving Dock No. 1 (May 17, 2006). The pumphouse is behind the gantry crane. In the foreground, the caisson has lost the "New" in "New York Shipyard Corporation."

Mary Habsritt



2007 GENERAL TOOLS AWARD

Call for Nominations

The General Tools Award Committee invites and encourages SIA members to submit nominations for the **2007 Society for Industrial Archeology General Tools Award for Distinguished Service to Industrial Archeology**. The General Tools Award is the highest honor the SIA can bestow. The award recognizes individuals who have given sustained, distinguished service to the cause of industrial archeology and is presented at the SIA's annual business meeting.

Criteria for selection are as follows: (1) The recipient must have given noteworthy, beyond-the-call-of-duty service, over an extended period of time, to the cause of industrial archeology. (2) The type of service for which the recipient is recognized is unspecified, but *must be for other than academic publication*. (3) It is desirable but not required that the recipient be, or previously have been, a member of the SIA. (4) The award may be made only to living individuals. Teams, groups, agencies, firms, or any other collective entities are not eligible.

The nomination, which should not exceed three double-spaced typed pages, should address the specific accomplishments that qualify the nominee for the award.

Supplementary material (the candidate's resume, for example) may be appended to the nomination. Nominations must also include the name, address, telephone number(s), and e-mail of the nominator. Any SIA member in good standing may make a nomination.

The General Tools Award was established in 1992 through the generosity of Gerald Weinstein [SIA], chairman of the board of General Tools Manufacturing, Inc. of New York City, and the Abraham and Lillian Rosenberg Foundation. The Rosenbergs founded General Hardware, the predecessor to General Tools. The award consists of a citation, a commissioned sculpture ("The Plumb Bob"), and a cash award. Previous recipients are Emory Kemp (1993), Robert Vogel (1994), Edward Rutsch (1995), Patrick Malone (1996), Margot Gayle (1997), Helena Wright (1998), Vance Packard (1999), Eric DeLony (2000), Robert Merriam (2001), Charles Parrott (2002), Alex Barbour (2003), Charles Hyde (2004), and Lance Metz (2005). There was no award in 2006.

Nominations, *which must be received on or before April 16, 2007*, should be submitted to: William McNiece, Associate Professor of Anesthesia, Indiana Univ., Riley Hospital for Children, 702 Barnhill Dr., #2001, Indianapolis, IN 46202-5128; (317) 274-9992; wmcniece@iupui.edu. ■

and, although they built some small vessels, they were primarily supported by repair work.

These reasons probably explain why the Erie Basin shipyard changed hands several times in the 1870s and 1880s, including a lease to the Cramps of Philadelphia for 14 years, although they only operated it for two and sub-leased it to the Simpsons of Boston (see article on Cramps in this issue). In 1892 it became the John N. Robins Co. William H. Todd was hired as a foreman boilermaker by Robins in 1895. By 1909 he had become president of the company. British interests made an offer to buy the yard in 1915, but Todd and other employees banded together to make a counteroffer and Todd Shipyards Corp. was born. The Robins yard, as it was often still called to distinguish it from other yards later added, was then New York's largest ship repair facility with 29 acres of real estate and three floating dry docks in addition to the two graving docks.

Todd Shipyards went on to become a major national shipbuilding and repair company with yards in Jersey City and Hoboken; Portland, ME; Charleston; Mobile; New Orleans; Houston and Galveston; Los Angeles and San Francisco; Seattle and Tacoma; and Portland, OR. Todd also owned plants that manufactured boilers and oil-burning equipment to provide power to both ships and buildings.

WWI saw an intense period of activity with over 2,500 at work in the Erie Basin yard converting ships to wartime use and repairing damaged vessels. It continued to employ an average of 2,000 workers through 1939. The Brooklyn Division of Todd Shipyards Corp., as it was by then known, reached its peak employment of 19,617 workers in Oct. 1943. The two graving docks were supplemented by five floating dry docks during this busy period.

By 1983 Todd had closed its Brooklyn yard and soon went through a bankruptcy and restructuring. It still exists as Todd Pacific Shipyards with one yard in Seattle. The Red Hook property was sold to U.S. Dredging in 1985. It operated NY Shipyard Corp. there until 1993 when it too went bankrupt. U.S.D. later leased Graving Dock No. 1 to Stevens Technical Services which repaired tugs, barges, city sludge boats, and other ships until Feb. 2005 when it was evicted as part of the sale to IKEA. Stevens made an offer to buy the dock from IKEA, but was rebuffed. Architect Harold Fredenburgh created alternative plans showing that IKEA and the graving dock could co-exist at the site and the Save the Graving Dock Committee has sought this outcome.

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Todd's Erie Basin shipyard during its heyday, ca. 1946.

Courtesy Todd Pacific Shipyards

The construction of the 540-ft.-long Graving Dock No. 1 in Erie Basin was completed in 1866 for the Erie Basin Dock Co. It was quickly followed by Graving Dock No. 2, which, at 630 ft., was large enough to take any ship then sailing but one (*The Great Eastern*, noted for laying transatlantic cables). In 1883, little had changed as *Scientific American* called the graving docks at Erie Basin the largest dry docks in the country and possibly the world.

Graving Dock No. 1, originally built of timber, was enlarged between 1880 and 1881 to a length of 600 ft. and may have been further re-built in 1896. When the country's shipbuilding situation was assessed for the WWI effort, the two graving docks were listed at 510 and 620 ft. (the shorter length is measured inside the caisson). Graving Dock No. 1 was completely re-built in steel and concrete and enlarged to 750 ft. in a project that took over a year from 1928 to 1929. It was constructed by Todd without borrowing any money, highly unusual when only governments were believed to have the capital necessary to build graving docks. Planned to be the most capacious dry dock in the region, it was envisioned "to handle most large liners then coming to the port," but by its completion many of the premier liners were too large for it. Even so, in the 1940s Todd could still claim it was the "largest privately owned dry dock in New York



Courtesy PortSide New York

The rebuilt Graving Dock No. 1 was celebrated with pomp and circumstance on Dec. 7, 1929.

Harbor," able to handle vessels up to 730 ft. in length.

Graving Dock No. 2 was lengthened in 1928-29, but not otherwise substantially altered. It was buried under landfill in the late 1970s. It may be one of the few large wooden graving docks left in New York Harbor.

Once a ship had entered and the caisson or floating gate was closed, the graving dock would be dewatered. Each of the Todd graving docks was originally supplied with a very large (7-ft. dia.) Andrews centrifugal cataract pump, patented in 1854. William D. Andrews of Manhattan appears to have been the first to introduce centrifugal pumps, developed in Europe, to the U. S. Centrifugal pumps were particularly well-suited for use in dry docks because of their ability to raise large quantities of water. The pumps in Erie Basin had a capacity of 23,500 gallons per minute each. Each pump was arranged at the top of a pit with a pipe leading underground to its intake, the drain of the dock. Water was expelled through box drains in the sides of the docks.

Each pump was driven by a vertical single-cylinder steam engine housed in the pumphouse. An underground steam pipe and flexible hose from the pumping engines' boiler carried steam to pumps on board each caisson. These pumps were needed to pump water out to control the caisson's flotation. When in place on its sill at the opening of the graving dock, the caisson allowed water to flow into the dock through gates in its sides to re-float the completed ship.

The centrifugal pumps in the pumphouse were electrified prior to 1916 when all shop tools were also converted to electric-motor drive. They were replaced by electrically driven spiral screw pumps in a pit nearer to the docks during the 1929 expansion. The pumphouse was converted to house an electric generator and switchboard. The original pumps, located in a pit, were reportedly floored over and the pump wells filled in 1943.

Mary Habstritt



One of the remaining gantry cranes, which IKEA plans to use as part of a maritime promenade. The large pile that looks like gravel is ground-up building debris. The estimated 15 truckloads of debris mysteriously disappeared from the site over MLK weekend in January. The NYPD is investigating.

second tube, which ejected the charge from the third tube. Since the tubes were stationary and could not be precisely aimed, their fire was unlikely to hit a point target, and *Vesuvius's* projectiles were deemed most useful as proximity bombs for detonating harbor mines.

Cramp also built fine yachts, including *Atalanta* for magnate Jay Gould and *Peerless* for Charles Harkness; the latter was equipped with the first triple-expansion engine in America. Cramp built *George W. Clyde* for the New York and San Domingo Line, which was equipped with the first compound engine installed in America. The first steam tug built in America (*Samson*) was built by Cramp. The yard's own floating derrick, *Atlas* (built in 1892), was the largest and most powerful in the world.

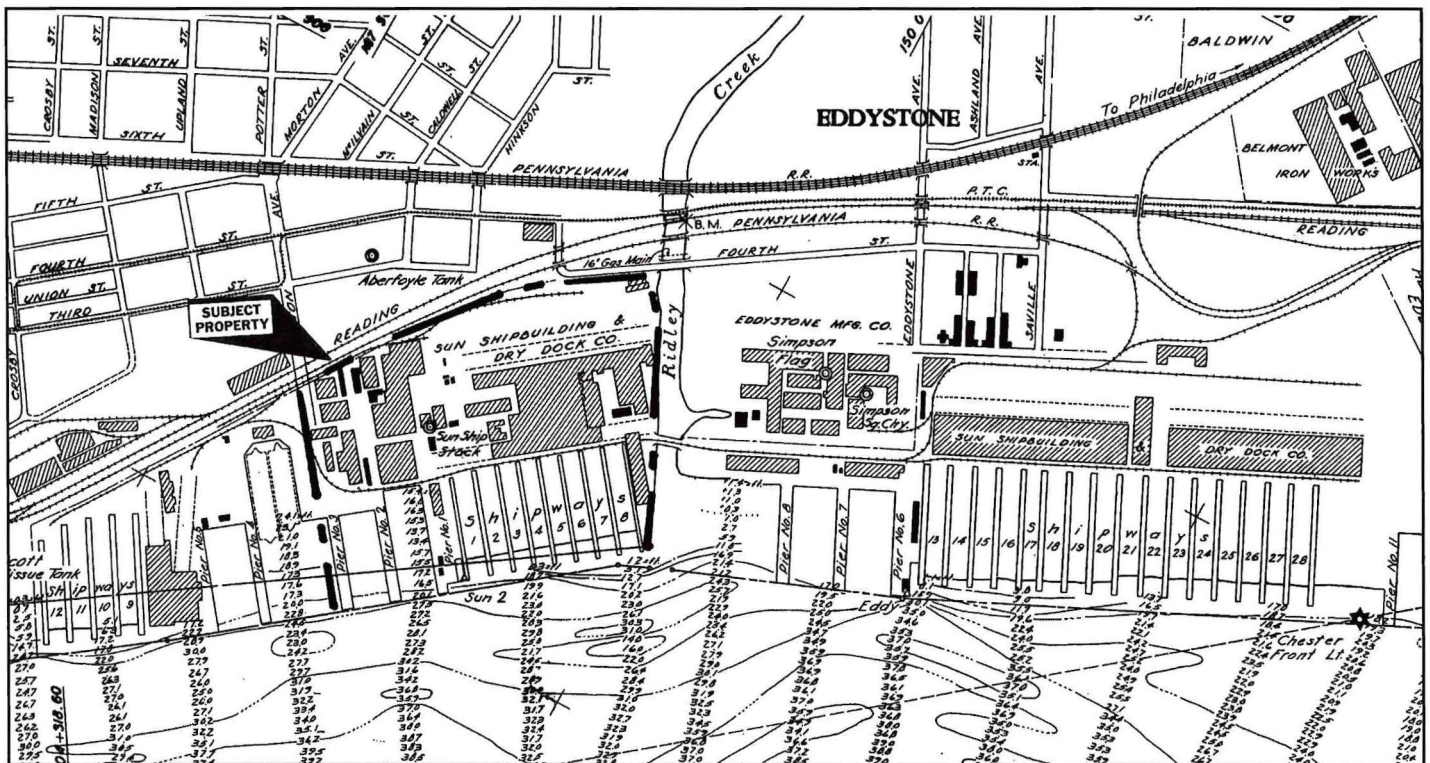
The shipyard became derelict during the 1930s, but reopened in 1940 as the Cramp Shipbuilding Co. Five light cruisers were built here during WWII, in addition to floating workshops and fleet tugs. But the yard was deemed most suitable for the construction of submarines for the war in the Pacific. Cramp built 16 submarines during WWII, one of only three non-government shipyards that built submarines in the U.S. during the war. The shipyard suffered

from limitations in dry dock and wet basin capacities, so the Navy funded Cramp's construction of a 620-ft.-long concrete graving dock. First used in July 1943, this dock could accommodate three submarines at a time. Still in use into the 1960s (long after Cramp Shipbuilding's dissolution), the graving dock was finally filled during the early 1970s. Remnants of the shipways lie beneath a blanket of fill.

During 2006, five proposals vied for the two licenses that would be awarded for stand-alone casinos in Philadelphia. Several contenders proposed riverfront sites. *The Philadelphia Inquirer* proclaimed Pinnacle Entertainment's proposal to be the best. That proposal included the southern portion of the Cramp shipyard site, where the graving dock is located.

On December 20, the Pennsylvania Gaming Control Board awarded both licenses to riverfront sites. Pinnacle Entertainment's proposal was not successful, hopefully ensuring that Cramp's graving dock will remain entombed for the foreseeable future, a buried relic of the U.S. Navy's successful campaign to cripple Japan by destroying its merchant fleet.

Michael Bernstein



Facilities of the Sun Shipbuilding & Dry Dock Co. of Chester, PA, during WWII. Shipways 1 through 8 (outlined) comprise the original shipyard and location of Harrah's Chester Casino & Racetrack. Shipways 13 through 28 comprise the main expansion of WWII, with Shipways 9 through 12 also shoehorned in at that time. The two rectangular objects in the recessed wet basin between Pier Nos. 3 and 4 are floating dry docks. Source: U.S. Engineer Office, Philadelphia, Apr. 30, 1943, surveyed Mar. 28 through May 11, 1942.

Snoqualmie Falls Lumber Company Power Plant

In 2004, neighbors of the recently closed lumber mill in Snoqualmie, WA, sighted a demolition notice for the mill's powerhouse and distinctive 200-ft.-high brick stack. They immediately took action and strong community opposition delayed demolition of the historic power plant. In March 2005, the Snoqualmie Falls Lumber Co. Power Plant was designated a King County Landmark by the King County Landmarks Commission. The designation noted the key role that the timber industry played in western Washington and the importance of the power plant in the transition from steam to electric power, "a pivotal landmark of engineering for the entire timber industry." The prominent power plant is one of the few remnants of what was once an extensive lumber industry, an engine of the Snoqualmie Valley's economy.

A feasibility study for rehabilitation was completed in Dec. 2006. The assessment found potential for adaptive reuse and laid out the structural and building-code related needs and costs. The county hopes to work with the community and Weyerhaeuser (the owner of the plant) to find a new owner and a new use, thus forestalling demolition. Weyerhaeuser is willing to transfer ownership if the new owner can prove intent to rehabilitate. Concurrently, Weyerhaeuser is planning a mixed-use development of the greater Snoqualmie Falls Lumber Co. site.

Many years earlier, in 1914, the Weyerhaeuser Timber Co. had partnered with Grandin Coast Timber to form the Snoqualmie Falls Lumber Company (SFLCo). Owning a huge swath of virgin timber in the state of Washington, these lumbermen decided to construct a timber mill at a site directly east of the dramatic 268-ft. Snoqualmie Falls, and 25 miles east of Seattle. This mill continued in operation until 2003.

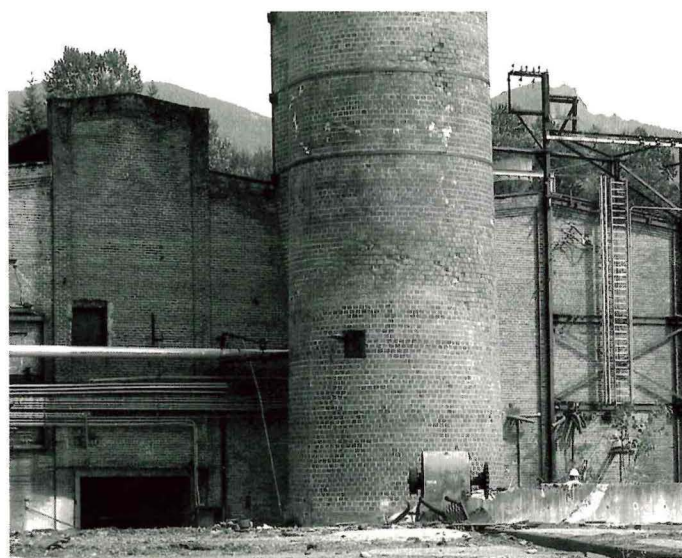
With the construction of the mill, SFLCo commenced work on an innovative idea—that of electrifying their operations (at this point a relatively untried technology). The brick powerhouse and 200-ft. brick stack were built in 1916-17. The complex of fuel bunker, powerhouse, and stack could be called "the heart of the mill" because it literally kept the mill going, pumping electrical energy to the saws, the equipment of the mill, the homes of the workers, and the logging camps.

SFLCo was the second in the nation to be electrified (the Everett (WA) Mill was the first) and the first to bring electricity to the timber-cutting operations in the woods. Power was generated by burning all the scrap (bark, chips, sawdust, etc.). The mill generated its own electricity until the 1980s. The powerhouse provided the steam required for the dry kilns until the 1990s. Much of this equipment still sits in the powerhouse. The 140-ft. by 84-ft. brick powerhouse has three separate 'rooms' with height varying from 30 ft. to 40 ft. The first room houses the turbines, generators, electrical switching gear, and control panels; the second (home to the original boiler) has backup equipment; and the third surrounds a massive boiler.

The remnants of SFLCo stretch from the power plant, bordering a millpond at the southern boundary, to huge lumber sheds at the north. Timber was brought to the site and stored in the mill pond. From there it was moved to the adjacent sawmills and slowly made its way north through the dry kilns, cooling sheds, and planing mill. Today, most of the mill buildings have been demolished; all of the community buildings and houses that were located to the east, north, and southeast were removed in the 1950s and 1960s. What remains of the lumber operation and the mill town of Snoqualmie Falls are photos and the memories of countless



Snoqualmie Falls Mill, 1944. Of all the buildings pictured, only the powerhouse and the brick stack (with black smoke) remain.

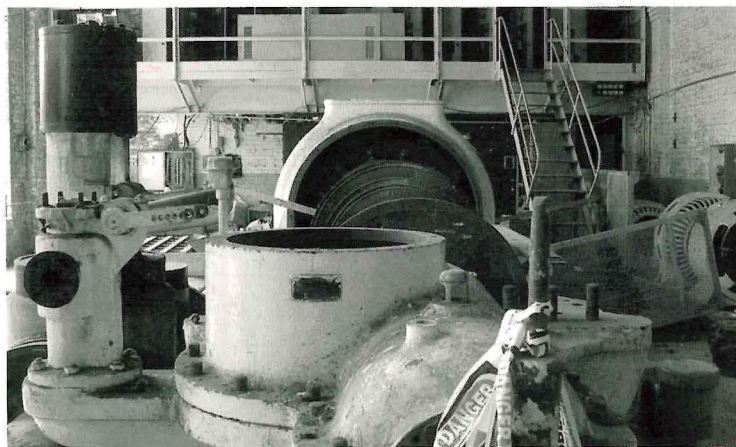


West façade of the powerhouse and brick stack, 2006.

former employees. These came to the forefront at the landmark hearing for the power plant. An outpouring of stories and support for preserving the power plant made clear the importance of the mill to the community.

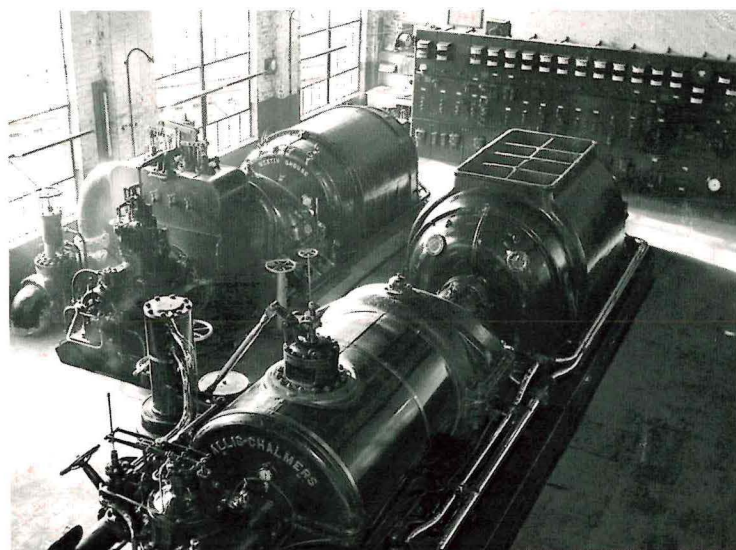
The 200-ft. brick stack with its radial perforated brick and the distinctive power plant await a new owner. The power plant could be restored as an example of sustainable development, showcasing the reuse of building and materials. Since the powerhouse once generated all of the electricity needed by the local community, it would be fitting if new forms of energy (and energy-savings) could be utilized. Developing the power plant for commercial use opens up more possibilities for saving the brick stack: incentive packages, federal tax credits, and construction of leased spaces can be creatively combined to produce a feasible financial plan.

Although the complex will no longer generate electricity, the building has definite potential for alternative uses. The interior spaces are large and open. The rehabilitation study considered several options, including office space, a brewery, or an industrial arts center with workshops, retail space, and studios. The glazed south face of the turbine room looks out over the large millpond. This pond, once known as Lake Borst, is adjacent to the Snoqualmie River and an area which may become a public open space. Many artifacts of electrical history (turbine, boiler, meters, and gauges) remain and could be displayed in the rehabilitated complex. Former employees have stepped forward with information on the workings of the plant. The potential for an extensive oral history exists. The community continues to hope that a story can stay alive and a major historic asset be saved. Info: Patricia Fels, PTF Architects; (425) 222-0744; tusafels@centurytel.net. ■



Patricia Fels

Turbine Room, 2006. The mezzanine was added at a later date for updated electrical controls; turbine in foreground.



Harold Keller collection

Turbine Room, 1945.

Nominations Committee Announces 2007 Slate

The SIA Nominations Committee is pleased to present the following slate of candidates for the 2007 election:

Director

(3-year term) You will vote for two

Scott Baxter
Diana Bouchard
Betsy Fahlman
Mike Hamilton
Timothy Mancil

Nominations Committee

(3-year term) You will vote for one

Amanda Gronhovid
Christopher Marston
Bode Morin

SIA by-laws state that the Nominations Committee shall notify the membership of the proposed slate at least 70 days in advance of the Annual Business Meeting. **This**

is that notice; it is not a ballot. Additional nominations may be made in writing over the signatures of no fewer than 12 members in good standing (dues paid for the 2007 calendar year) and delivered to the Nominations Committee chair at the address below no later than **April 21, 2007**. Candidates must have given their consent to be nominated and must also be members in good standing. Ballots, which will include a biographical sketch and photograph of each candidate, will be mailed in late April. Members must have paid their dues for the 2007 calendar year in order to vote.

The 2007 Nominations Committee is Jet Lowe (chair), Cydney Milstine, Ed Grusheski, and Chris Andreae (ex officio). Please direct all nominations and other correspondence to: SIA Nominations Committee, c/o Jet Lowe, 221 Stoney Run Lane, J-3, Baltimore, MD 21210; (w) 202-354-2138; (h) 410-662-4888; Jet_Lowe@nps.gov. ■

IA in Art: John W. Mackay by Gutzon Borglum

Born on the Idaho frontier, Gutzon Borglum (1867-1941) personified the expansive vantage typical of those native to the American West. He was possessed of a dynamic personality, which, coupled with tremendous energy and bold ambition, made him eager to engage the challenges of public sculpture. His most famous piece was Mount Rushmore (1927-41), four mammoth presidential heads carved in the granite of the Black Hills of South Dakota. He studied art in Paris, and his career was launched when he won a Gold Medal at the Louisiana Purchase Exposition in St. Louis in 1904.

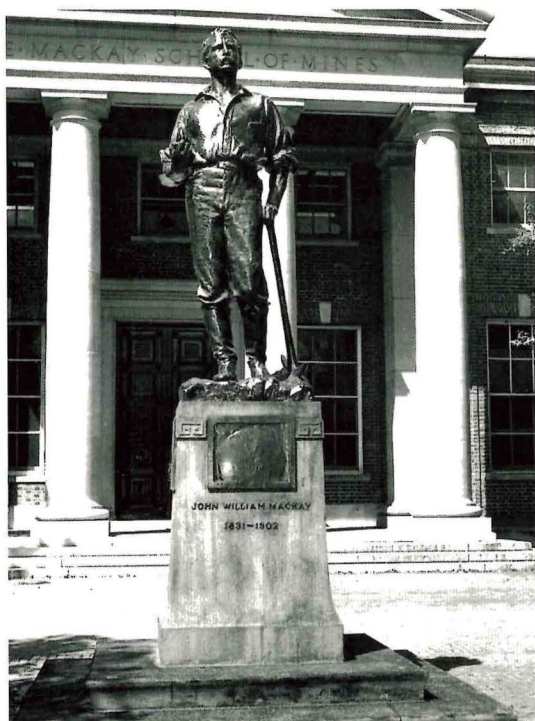
The commission to execute the Mackay monument came early in his career. John William Mackay (1831-1902) was one of Nevada's famed "silver kings," and although he is recognized for notable accomplishments in other endeavors (including financing two transatlantic telegraph cables), he was best known for his work in developing deep underground mining.

Mackay's is a story of immigrant achievement, and a contemporary account reported that he had "climbed the mining ladder from the bottom rung." Born in Ireland, he came with his parents to New York in 1840, and by 1851 had become involved in mining in California. He did not find much success there, and in 1860 moved to the area of Virginia City, Nevada. He formed a partnership in 1869 with three other businessmen in order to develop the Comstock Lode. Their efforts were amply rewarded when in 1873 he discovered the "Big Bonanza" vein—the richest silver deposit in America. By the time production peaked

in 1877, Mackay had made an immense fortune. He sold his shares in 1883.

Mackay died in 1902 at the age of 71, and four years later in 1906 Borglum was commissioned to do a 7-ft.-tall bronze statue. Dedicated in 1908, it was installed on a tall stone base outside the new School of Mines at what is now the University of Nevada at Reno. Originally it had been proposed to honor him at the Capitol in Carson City, but officials declined to have statues "cluttering" the grounds. Funds were provided by his widow, Marie Louise Mackay, and his son, Clarence Hungerford Mackay, who also endowed the school and paid for a handsome new building designed by Stanford White, one of New York's leading architects. A writer for the *Nevada State Journal* proudly declared it "the finest public art treasure in the State."

Mining was the transformative industry of the American West, and the miner is as archetypal a figure as the cowboy who rode the open range. Mackay, described by one of his friends as "the best type of the American miner," was portrayed by Borglum not as a bold and wealthy speculator, but as an unpretentious man who performed manual labor. Mackay stands strong and sturdy, clad in the ordinary clothing he wore for the countless trips he made into his sweltering mines, where he would tramp through a maze of drifts and cross-cuts deep in the earth. It was a risky and dangerous business, with heat and flooding challenging his ambition to push further in search of profitable veins. Typically he wore a blue flannel shirt open at the throat with the sleeves rolled up, and his trousers, stained with clay, tucked



Courtesy University Archives



Gutzon Borglum's statue of John W. Mackay (1906-8), University of Nevada, Reno.

into his heavy boots. His left hand rests on the handle of a pick, while his right firmly grasps a piece of ore. His bare head is thrown back, his chin up-tilted, and his face serious as he gazes towards the mountains that would yield him his fortune. Borglum has shown Mackay as an image of vigorous masculinity in his early forties, conveying the strength, resolve, and hard work that would make him a wealthy man.

A history of the Comstock Lode originally published in 1943 characterized Mackay as a model benevolent capitalist: "His name was constantly on the people's lips—almost invariably with words of praise. Everything about him was distinctive; his modesty, his reserve, his unfailing kindness

to old friends, his innumerable benefactions, his uprightness, and the simplicity and decency of his life. Riches did not corrupt or steal away his good name, but rather served as his means to further develop American resources." His character was "as clear as the lines of the Washington Monument." Such hagiography was grounded in the belief that money earned through hard work denoted integrity of character. Borglum's monument exemplifies Progressive Era confidence in modern economic development, and remains a testament to a visionary man who became a legend in the history of mining in the rugged and remote "Silver State."

Betsy Fahlman

Santa Cruz Portland Cement Co. #2

Preservation & Experimental IA

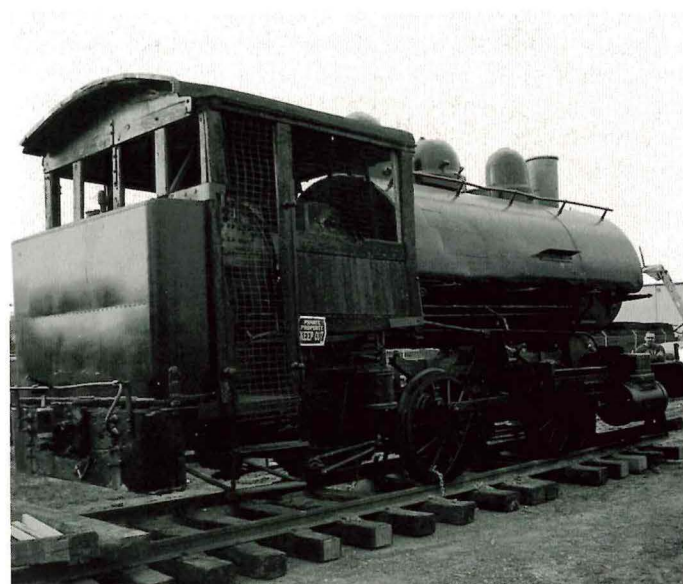
In 1909, a 45-ton Porter 0-4-0T steam locomotive was manufactured for the Santa Cruz Portland Cement Co. for their quarry located in Davenport, CA. This locomotive was a sizeable, oil-fired, saddle-tank engine equipped with slide valves and Stephenson link valve gear. It was used until 1924, when it was sold to the Betchell Kaiser Rock Co. of Oroville. Later it was retired and eventually sold to Ray Pollard in 1967 to be used as roadside advertising at the Pollardville Amusement Center located on Highway 99 just north of Stockton.

The locomotive remained at Pollardville, slowly deteriorating until it was sold to Efstathios I. Pappas [SIA] in April 2006. The amusement center was closing and the locomotive needed a new home. Pappas, a graduate of Michigan Tech's IA graduate program and currently a doctoral student at the University of Nevada, Reno, acquired it. Over the course of the summer, the locomotive underwent stabilization and cosmetic restoration in order to prevent further deterioration. This included partial disassembly and cleaning of running gear, lubrication, removal of sensitive fittings and appliances, inspection of boiler-sheet thickness, painting, bracing of the wooden cab, sealing all openings and plumbing, and removal of drive rods prior to movement. On Nov. 17, 2006 the locomotive was moved to a secure facility at the Central California Traction Co. railroad yards in Stockton for storage.

Santa Cruz Portland Cement Co. #2 will be part of an ongoing project that will document the rebuilding process using period appropriate methods and tools. Pappas has acquired a full complement of belt-driven machine tools and their associated line shafting in order to construct an appropriate railroad machine shop, ca. 1920. This project in experimental IA is expected to take between ten and twenty years to complete and will be fully documented and published in appropriate IA-related publications. Pappas plans to test the validity of the theory and practice presented in period instructional primary source literature. In order to more rigorously test these methods, a significant oral his-

tory component is also being undertaken in consultation with existing experts in steam rebuilding and restoration. Following restoration, the locomotive will be loaned to an appropriate institution, which will use it for public outreach and awareness of American industrialism and technology in an operating capacity.

Special thanks are extended to the following individuals and organizations for their assistance: Curtis Bonville, Steven Cope, Donald Hardesty, Paul and Gordon Moser, John and Paula Pappas, Wes Swanson, Murray Trailer, and the Industrial Railways Co. If anyone possesses additional information regarding this locomotive or would like to participate in the oral history component of this project please contact: Efstathios I. Pappas, Dept. of Anthropology/096, Univ. of Nevada, Reno, NV 89557; pappase@unr.nevada.edu; (209) 603-7363.



Efstathios Pappas

Santa Cruz Portland Cement Co. #2, prior to cosmetic restoration.

IA Journal Goes On-Line

The SIA is pleased to announce that the first issues of *IA: The Journal of the Society for Industrial Archeology* are available on-line. This development has been a long time coming. After substantial consideration, the SIA Board approved affiliation with The History Cooperative, a consortium centered at the University of Illinois Press. The core members of the consortium are the American Historical Assn., the Organization of American Historians, and the National Academies Press, with additional partners including journals such as *Environmental History*, *The History Teacher*, *Journal of Social History*, *Labour History*, and state journals such as *Massachusetts Historical Review*, *Oregon Historical Quarterly*, and *Pennsylvania Magazine of History & Biography*, among others.

Vols. 29 and 30 of *IA* went on-line in Jan. 2007, and more issues are in the process of being added to the site. Any visitor to The History Cooperative Web site (www.historycooperative.org) can currently access these sample issues of *IA* free until Jan. 2008. After this initial period only subscribers will have access. A link is also

available from the SIA Web site (www.sia-web.org/iajournal/siaia.html). The exact terms of electronic subscription are not settled yet, but access will certainly involve additional cost to existing print subscribers. We expect in the long run that some subscribers will opt for the electronic format only, and this will provide an impetus for growth among institutional subscribers, like libraries. This has been the pattern among other history journals that have moved to an on-line format.

Initially, we will have only current issues on-line, but will gradually migrate back issues to this format as well. One of the key advantages of The History Cooperative, over a simpler pdf page-image format, is more powerful search mechanisms to allow efficient research beyond the current issues.

Please take a moment to explore this exciting new service. If you have any questions, please contact the SIA HQ, sia@mtu.edu; (906) 487-1889.

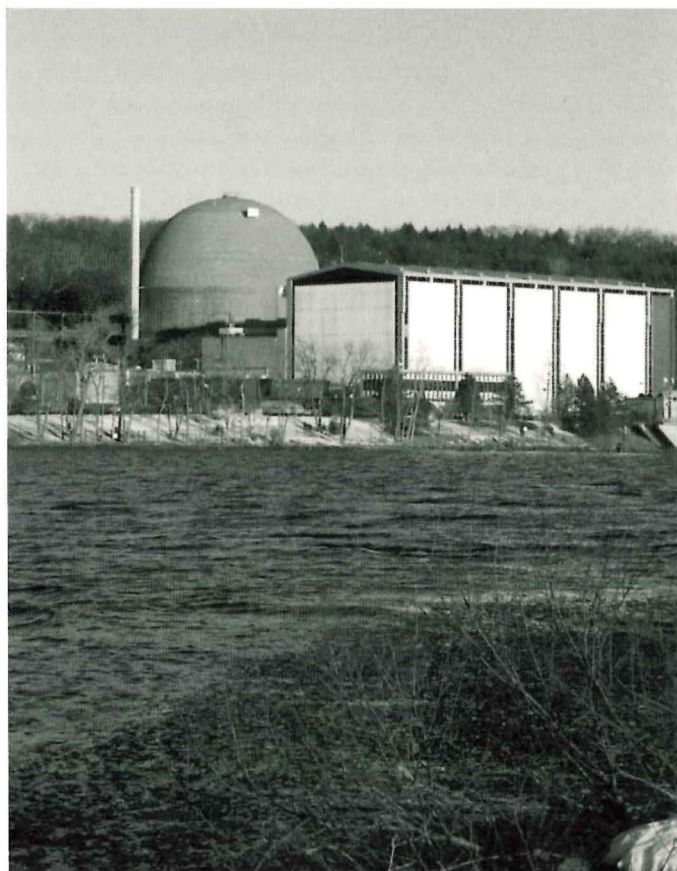
Patrick Martin, Don Durfee & Scott See

UConn Library Adds IA Research Collections

The University of Connecticut Library, Thomas J. Dodd Research Center in Storrs has added two significant collections to its already impressive holdings.

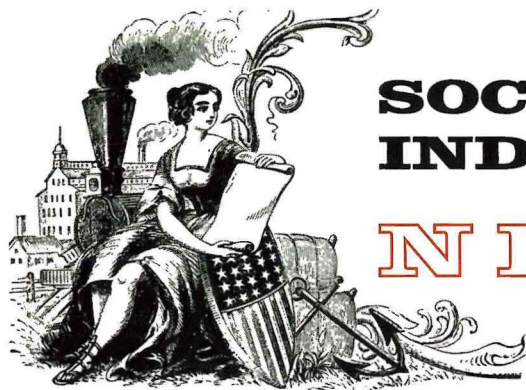
Francis D. Donovan Railroad Collection is a large collection of photographs, research files, timetables, and publications related to New England railroads from the 19th century to the present. Francis D. Donovan (1917-2005) was not your ordinary railroad fan. He grew up in a railroad family and had an extensive knowledge of New England railroads in general and of the NY & New England RR, a predecessor of the New Haven RR, in particular. He was known among his circle as the "go-to-guy" for any information about the history and impact of the railroad, and he generously shared his knowledge and his collections with researchers.

Connecticut Yankee Atomic Power Collection consists of the historical records of the Haddam Neck Plant including design drawings, employee newsletters, scrapbooks, plaques, photographs, and audiovisuals. CT Yankee began operation on Jan. 1, 1968 with an annual capacity of 490,000 kW. Its capacity was later increased to 582,000 kW. The plant was formally retired on Dec. 6, 1996, when the directors voted to permanently close after an economic analysis determined the cost of supplying electricity was not beneficial to its customers. As part of the decommissioning, the CT State Historic Preservation Office (SHPO) under its regulatory responsibilities surveyed the property and arranged for the historic and photographic documentation to be deposited at the Dodd Research Center.



Thomas J. Dodd Research Center

Connecticut Yankee Atomic Power Plant (1968).



SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

PUBLICATIONS OF INTEREST

Vol. 36, No. 1

Winter 2007

COMPILED BY

Mary Habstritt, New York, NY; and Patrick Harshbarger, SIAN editor.

GENERAL INTEREST

- ◆ David S. Landes. **Dynasties: Fortunes and Misfortunes of the World's Great Family Businesses.** Viking, 2006. 380 pp. \$25.95. A sort of Plutarch's *Lives* of 13 important business families including Ford, Peugeot, Wendel (the French iron dynasty), and Rockefeller.
- ◆ Brook Larmer. **The Manchurian Mandate.** *National Geographic*, vol. 210, 3 (Sept. 2006), pp. 42-73. China is gearing up to turn its northeastern rust belt, once the centerpiece of Chairman Mao's planned economy, into the country's next engine of growth. Details desperation of poor and unemployed workers and how they will be affected by the changes.
- ◆ Robert J. Lilly. **The Wynants Kill: A Small Stream But Mighty.** aGatherin' Publications (Box 477, W. Sand Lake, NY 12198; 518-674-2979; agatherin@yahoo.com), 2006. 62 pp., illus. \$15 paper. Documents the industrial history of 19 water privilege sites along the Wynants Kill, a tributary of the Hudson near Troy. Includes grist, fulling, paper, textile, and saw mills, glassworks, tanneries, and ironworks.
- ◆ Alex Marshall. **Beneath the Metropolis: The Secret Lives of Cities.** Carroll & Graf, 2006. 240 pp. \$29.95. Discusses what is underneath twelve of the world's great cities—New York, Paris, London, Chicago, San Francisco, Mexico City, Rome, Cairo, Tokyo, Beijing, Moscow and Sydney—in terms of infrastructure, geology, and archeology. Or said another way, in terms of tunnels, pipes, wires, rails, rocks and ruins.
- ◆ Tim McCreight. **Practical Casting: A Studio Reference.** Astragal, 2005. 128 pp., illus. \$13.95. Although written primarily for artists and craftsmen, clearly explains many aspects of small-scale casting that have industrial applications, including lost-wax method, sand casting, and direct methods like cuttlefish and bronze casting. Many detailed illustrations.
- ◆ Mario Taddei and Edoardo Zanon. **Leonardo's Machines: Da Vinci's Inventions Revealed.** Astragal, 2006. 240 pp. \$24.99. Combines work from Da Vinci's original coded notebooks along with modern computer imaging to create a sensational set of three-dimensional diagrams showing every working part of over 30 inventions, from manned flying machines and mechanical bridges to musical instruments.
- ◆ Kristen Haring. **Ham Radio's Technical Culture.** MIT, 2006. 224 pp. \$27.95. Draws on a wealth of personal accounts to describe how ham-radio culture rippled through hobbyists' lives. Within this community, hams developed distinct values and practices with regards to radio.
- ◆ Andrew E. Kramer. **From Russia, with Dread.** *NY Times* (May 16, 2006). The only factory in the world still making vacuum tubes for guitar amplifiers is in Saratov, Russia. The American owner faces a hostile takeover from Russian businessmen (or perhaps mobsters).
- ◆ Christopher Lecuyer. **Making Silicon Valley: Innovation and the Growth of High Tech, 1930-70.** MIT, 2005. 424 pp. \$40. The explosive growth of the personal computer industry—including the rise of new firms like Apple—was the culmination of decades of growth and innovation in the San Francisco-area electronics industry.
- ◆ Arthur L. Norberg. **Computers and Commerce: A Study of Technology and Management at Eckert-Mauchly Computer Company, Engineering Research Associates, and Remington Rand, 1946-57.** MIT, 2005. 347 pp. \$40. History of Minneapolis-based Engineering Research Assoc. and the Philadelphia-based Eckert-Mauchly, small firms that each played important roles in the development of speedier and more reliable computers with capacity to store greater amounts of information. Eventually the two firms were consolidated at Remington Rand and later at the UNIVAC division of Sperry Rand. Rev.: *T&C* (July 2006), pp. 682-3.
- ◆ Mark Wolverton. **Communicating with Farthest Space.** *I&T* (Spring 2006), pp. 6-15. The development and construction of the Deep Space Network's gigantic dishes that can pull in radio signals a few billionths of a watt strong.

TEXTILES

- ◆ David von Drehle. **Trial by Fire.** *Smithsonian*, vol. 37, 5 (Aug. 2006), pp. 93-8. Nearly vain hunt for original records and firsthand accounts of the Triangle Shirtwaist Factory fire. Fortunately, the owners' defense attorney left carbon copies of trial transcripts to the library of the NY County Lawyers' Assn. Once found, the crumbling volumes were digitized by Cornell and made available on-line.
- ◆ Beth English. **"I Have ... a Lot of Work to Do": Cotton Mill Work and Women's Culture in Matoaca, Virginia, 1885-95.** Also, **Matoaca Manufacturing Company: A Photographic Essay.** *Virginia Magazine of History and Biography*, vol. 114, 3 (2006), pp. 356-84+. History of the Matoaca cotton mills, west of Petersburg, with emphasis on the life of Anthelia Holt, a weaver there in the 1890s.

ELECTRONICS & COMMUNICATIONS

- ◆ Alfred Chandler, Jr. **Inventing the Electronic Century: The Epic Story of the Consumer Electronics and Computer Industries.** Harvard, 2005. 321 pp. \$18.95. History and analysis of the successes and failures of the large businesses that dominated the industries from radio (RCA) through computers (IBM and Microsoft). Rev.: *T&C* (July 2006), pp. 680-1.

- ♦ C. J. Hughes. **An Old Textile Center, Refashioned for Luxury.** *NY Times* (May 31, 2006). Redeveloping textile mills and workers' neighborhoods in Norwich, CT.

AGRICULTURE & FOOD PROCESSING

- ♦ Michael D'Antonio. **Milton S. Hershey's Extraordinary Life of Wealth, Empire, and Utopian Dreams.** Simon & Schuster, 2006. 305 pp., \$25. Biography of the candy magnate includes descriptions of innovations in manufacture of caramels and milk chocolate, and the building of the company town with its trolley system and kiss-shaped lampposts. Rev.: *NY Times Book Review* (Jan. 15, 2006).
- ♦ G. William Beardslee. **When Hops Were King.** *NY Archives*, vol. 6, 2 (Fall 2006), pp. 16-20. Hop houses or kilns that were once so common in NY that every other farm had one in the "hop belt" stretching across Otsego, Chenango, Madison, Oneida, Montgomery, and Schoharie counties. The kilns were used to dry, bleach, cure, package, and store the hop flowers or cones used in beer brewing. In addition to adding flavor, hops extended shelf life. Constructed between the early 1800s and 1900, only a few score NY hop houses remain.
- ♦ Greg A. Brick. **Stahlmann's Cellars: The Cave Under the Castle.** *Ramsey County History*, vol. 41, 1 (Spring 2006), pp. 12-19. Exploration of the caves under the Schmidt Brewery in St. Paul, MN. The owner of the Stahlmann Cave Brewery (est. 1855) carved extensive lagering caves through the sandstone of the Mississippi River bluffs. When Schmidt took over the brewery in 1901, mechanical refrigeration was installed and the caves were used as sewers for disposal of wastewater and beer. Article covers changes in ownership and conversion to an ethanol plant until its shutdown in 2004.
- ♦ Jake Mooney. **Williamsburg: Where Sugar Once Ruled, a Face-Off over the Future.** *NY Times* (Oct. 1, 2006). Preservationists work to document and save the Domino Sugar plant (tour site—2002 Annual Conference, Brooklyn). Quotes Mary Habstritt [SIA]. Also, Leah Kreger. **Will One More Domino Fall in Williamsburg?** *Brooklyn Rail* (Sept. 2006). An excellent summary of the zoning and development issues. Avail.: <http://brooklynrail.org/2006-09/local/will-one-more>.

IRON & STEEL

- ♦ Chris Evans and Gören Rydén, eds. **The Industrial Revolution in Iron: The Impact of British Coal Technology in 19th-Century Europe.** Ashgate, 2005. 200 pp. \$94.95. Essays study the transfer of the British model of smelting iron in large coke-fired blast furnaces and refining and finishing iron at rolling mills with coal-fired puddling furnaces to Belgium, France, Germany, Sweden, Russia, and Spain. Each country faced problems that prevented the implementation of one or more parts of the model, thus prompting further innovations and solutions to adapt to local conditions. Rev.: *T&C* (July 2006), pp. 668-9.
- ♦ Ray Schreiner. **Tredegar Horseshoes: A Lost Trade.** *FiftyPlus* [Richmond, VA], vol. 10, 4 (Dec. 2006), p. 5. Recalls Richmond's Tredegar ironworks and the history of its horseshoe business that flourished during WWII supplying farmers who used horses for hauling due to wartime restrictions on gasoline.
- ♦ Marianne Thomas-Ogle. **History Is Foundation of New Helena Park.** *Birmingham (AL) News* (Dec. 29, 2006). Helena city park will be established to preserve the Billy Gould Coke Ovens (ca. 1860-70), among the oldest ovens surviving in the U.S. and widely acknowledged to be the first in the Birmingham iron district.

WATER TRANSPORT

- ♦ Ann Bartholomew and Lance Metz [SIA]. **Delaware and Lehigh Canals: A Pictorial History of the Delaware and Lehigh Canals National Heritage Corridor of Pennsylvania.** 2nd Ed. Canal History & Technology Press (610-559-5794), 2005. 163 pp., 330+ photos. \$24.95. Update of the 1st ed. (1989), with a number of additional photographs. The story of the anthracite canals through maps, drawings, photos, and captions.
- ♦ Raber Associates. **Marine Railways of Southeast Connecticut: Historical Survey and Inventory.** Prepared for CT Dept. of Environmental Protection, Nov. 2006. 89 pp., illus., maps. Avail.: Dave Poirier, dave.poirier@ct.gov. Context and inventory of marine railways - inclined rails supporting a cradle or carriage on which a vessel could be supported and moved from a floating position to a dry one for repairs or storage. They were used extensively on the lower Thames and Mystic rivers beginning in the 1820s and continuing well into the 20th century.
- ♦ Andrea Sutcliffe. **Steam: The Untold Story of America's First Great Invention.** Astragal, 2004. 304 pp., illus. \$11.95. Retelling of the stories of John Fitch and Robert Fulton, both of whom developed early steamboats and along with several other inventors fought bitterly for the credit and glory. Fitch, who may have had the strongest claims, was rewarded with ridicule and poverty, while Fulton ended up with much of the acclaim.

RAILROADS

- ♦ Don L. Hofsommer. **Minneapolis and the Age of Railways.** Univ. of Minnesota Pr., 2005. 238 pp., \$39.95. Chicago and St. Paul were favored over Minneapolis in railroad connections. In the search for better connections to support its industries, the city gave rise to two home-grown railroads: the Minneapolis & St. Louis and the Minneapolis, St. Paul & Sault Ste. Marie. Tourism promotion, industrial development, and national trends are all part of the story. Rev.: *Minnesota History* (Summer 2006), p. 81.
- ♦ **It's Work.** Center for Railroad Photography & Art (Box 259330, Madison, WI 53725; www.railphoto-art.org/store/publications.asp), 2006. 32 pp., illus. \$17.45 ppd. Companion book to the center's seven traveling exhibits of photographs of railroad work. The goal of the exhibits and publication are to build the awareness of the significance of the human element of railroading.
- ♦ **Railway Museum Quarterly** is the journal of the Assn. of Railway Museums. No. 41 (Fall 2006) includes Aaron Isaacs, *Sampling Indiana Rail Preservation*, with overviews of the National NY Central RR Museum (Elkhart), Indiana Transportation Museum (Noblesville), and Hoosier Valley RR Museum (N. Judson). Info: www.railwaymuseums.org.
- ♦ Amy G. Richter. **Home on the Rails: Women, the Railroad, and the Rise of Public Domesticity.** Univ. of North Carolina, 2006. \$19.95 paper. Race, class, and gender influence the roles and attitudes of passengers and workers.
- ♦ Leah Rosenow. **Badger #2 and the Fish Car Era.** *Mid-Continent Railway Gazette*, vol. 39, 4 (Dec. 2006), pp. 5-39. History and development of fish cars, cars specially outfitted to transport live fish for federal and state fishery services from the 1870s to 1940s. The Mid-Continent Railway Historical Society (N. Freedom, WI) is documenting and restoring Badger #2, built in 1912 for the Wisconsin Conservation Service.

- ♦ **Timber Transfer** is the quarterly of the Friends of the East Broad Top RR (Orbisonia, PA). Vol. 23, No. 1 (Spring 2006) includes IA of abandoned railroad tunnels, Woodvale company store (history and scale drawings), stripping shovels used at Rockhill coal mine, Perrottet & Hoyt derrick (1878) in EBT shops. Avail. with membership, \$30/yr., www.febt.org.

WATER CONTROL & RECLAMATION

- ♦ David Billington, Donald Jackson, and Martin Melosi. **The History of Large Federal Dams: Planning, Design, and Construction**. US Dept. of the Interior, Bureau of Reclamation, 2005. 623 pp. Avail: www.cr.nps.gov/history/online_books/dams/federal_dams.pdf. Exhaustive histories of the large dams built by the Bureau of Reclamation and the U.S. Army Corps of Engineers.
- ♦ Kevin Bone and Gina Pollara, eds. **Water-Works: The Architecture and Engineering of the New York City Water Supply**. Monacelli, 2006. 288 pp., illus., \$50. NYC's legendary water supply has been achieved through a massive program of exploration and construction that is still ongoing. Described in essays and illustrated with a remarkable archive of drawings and photographs documenting the design and construction of dams, reservoirs, aqueducts, and tunnels. The editors, with architecture students from Cooper Union, spent nine years cataloging and preserving the archive held by the city's Dept. of Environmental Protection.
- ♦ Tom Huntington. **Desert Colossus**. *I&T* (Fall 2006), pp. 10-21. Building Hoover Dam.
- ♦ Werner Troesken. **The Great Lead Water Pipe Disaster**. MIT, 2006. 296 pp. \$29.95. Examines 150 years of lead pipes in local water systems and the associated sickness, premature death, political inaction, and social denial. Case studies of New York, Boston, and Glasgow (Scotland) and many smaller towns in New England and England.

POWER GENERATION

- ♦ A. Frederick Collins. **The Boy's Book of Engine Building**. Lindsay (www.lindsaybks.com), 2006. 261 pp., illus. \$12.95. Reprint of 1918 ed. A how-to book for making live-steam models from simple piston engines to locomotives. Instructions for making the patterns for brass or iron castings and how to use machine tools for parts. A boy could claim he built the entire engine. No kits please.
- ♦ Alfred W. Crosby. **Children of the Sun: A History of Humanity's Unappeasable Appetite for Energy**. Norton, 2006. 192 pp. \$23.95. Tracing energy's use over millennia, illustrates the relationships between new energy resources and technologies and advances in civilization and growth of population. Rev.: *T&C* (July 2006), pp. 638-9.
- ♦ A. Roger Ekirch. **At Day's Close: Night in Times Past**. Norton, 2005. 447 pp. \$25.95. Description of night-time before electric lighting, including not just lighting techniques—rushlights, candles, oil lamps, coal-gas lights, etc.—but beds, bedclothes, and illustrations of crime, drunken riots, and festivals that flaunted authority. Rev.: *T&C* (July 2006), pp. 640-1.
- ♦ Henry Fountain. **Strange Love**. *NY Times* (Jan. 5, 2007). Touring the history of atomic energy in AZ, NV, and NM, including the National Atomic Museum, Trinity Site, Titan Missile Museum, Nevada Test Site, and the Museum of Atomic Testing.

- ♦ **From a House of Brands to a Branded House**. *Flowserve* (Aug. 2006), pp. 24-28. Explains the management and marketing philosophy of the Dallas-based Flowserve Corp., a Fortune 100 company and leading provider of valves, pumps, seals, and steam solutions to the oil, gas, power, water, and chemical industries. For marketing and customer loyalty, Flowserve maintains its 50 "heritage" brands, the names of those companies absorbed into the conglomerate, including, for example, Gestra (German-based steam management system manufacturer), Durco (pumps), Limitorque (valve automation), and Edward (valves).
- ♦ Kim Krenz. **Deep Waters: The Ottawa River and Canada's Nuclear Adventure**. McGill-Queen's Univ., 2004. 168 pp. \$44.95. Memoir of a scientist's work at the Chalk River Laboratories and Atomic Energy Canada Limited (AECL) from 1945 to 1980. Rev.: *T&C* (July 2006), pp. 673-4.
- ♦ **Windmillers' Gazette** is a quarterly journal for the preservation of America's wind power history and heritage. Vol. 24, 4 (Autumn 2005) includes: T. Lindsay Baker, *Two Brothers, Several Companies, and Handsome Products: The Story of the Wolcott Patent Windmills* (vaned section-wheel wooden windmills manufactured in Michigan); Vol. 25, 4 (Autumn 2006) includes: T. Lindsay Baker, "Named Windmills" on *Western Ranches* (some ranches had so many windmills that numbering or naming them was necessary) and *The Steel Monitor: The First All-Metal Windmill from the Baker Manufacturing Co.* (company based in Evansville, WI, est. 1873). Avail.: Box 507, Rio Vista, TX 76093. \$20/yr.

BUILDINGS & STRUCTURES

- ♦ Louis Rodriguez. **From Elephants to Swimming Pools: Carl Akeley, Samuel W. Traylor, and the Development of the Cement Gun**. Canal History & Technology Press (610-559-5794), 2006. 150 pp., illus. \$15.95. How the cement gun evolved from Akeley's brilliant idea for creating elephant exhibits in a natural history museum to an indispensable tool for engineers and contractors. In the 1910s, the rights to the invention were bought by Traylor, an engineer with experience

CONTRIBUTORS TO THIS ISSUE

Richard K. Anderson, Jr., Sumter, SC; Michael Bernstein, Moorestown, NJ; Betty Bird, Washington, DC; Bill Chamberlin, Corinth, NY; Robert Chidester, Ann Arbor, MI; Arlene Collins, Houghton, MI; Diane DeBlois, W. Sand Lake, NY; Chris DellaMea, Beckley, WV; Steven DeVore, Lincoln, NE; Don Durfee, Houghton, MI; Betsy Fahlman, Tempe, AZ; Patricia Fels, Seattle, WA; Dennis Furbush, Jackson Heights, NY; John Gruber, Madison, WI; David Guise, Georgetown, ME; Mary Habstritt, New York, NY; Cameron Hartnell, Houghton, MI; Neill Herring, Jesup, GA; Michael Hoyt, Silver Spring, MD; Mark Kapalski, Houston, TX; Kenneth Lavelle, N. Royalton, OH; Carol Litchfield, Arlington, VA; Jet Lowe, Baltimore, MD; Mark Kanonik, Albany, NY; Lee Maddex, Pittsburgh, PA; Patrick Martin, Houghton, MI; William McNiece, Indianapolis, IN; Elizabeth Norris, Cold Spring, NY; Efstathios Pappas, Reno, NV; Dave Poirier, Hartford, CT; Marsha Roberts, Bloomington, IN; Scott See, Houghton, MI; Laura Katz Smith, Storrs, CT; John Teichmoeller, Ellicott City, MD; Patrick Thompson, Lexington, KY; J. Tyler Turpin, Richmond, VA; Robert M. Vogel, Washington, DC; Sara Wermiel, Jamaica Plain, MA; Suzanne Wray, New York, NY.

With Thanks.

in the mining and concrete industries, who adapted and promoted its use for mining, construction, and transportation projects worldwide. Sprayed concrete, known as gunite or shotcrete, is used in numerous applications, including tunnels and swimming pools.

- ♦ Sara E. Wermiel [SIA]. **Lighthouses**. Norton, 2006. 336 pp., illus. \$75. Several hundred images from the Library of Congress, many from the HABS/HAER collection, this book presents the history of American lighthouses organized by construction type (e.g., masonry, cast-iron plate, and iron pile), when introduced, main features and rationale, and examples of the work of prominent designers.

BRIDGES

- ♦ David Guise [SIA]. **Development of the Lenticular Truss Bridge in America**. *Journal of Bridge Engineering* (Jan./Feb. 2007), pp. 120-9. Lenticular-shaped iron trusses, built exclusively by the Berlin Iron Bridge Co. of East Berlin, CT, dominated the New England and adjacent area's modest-span bridge market for over a decade at the end of the 19th century. This paper examines the phenomenon in the larger context of earlier European development of the lenticular form and, with the assistance of numerous patent drawings and photographs of American lenticular bridges that were either proposed or built prior to the 1883 formation of Berlin.
- ♦ Nele Güntheroth and Andreas Kahlow, eds. **Von Mühlhausen in die Neue Welt—der Brückenbauer J. A. Röbling (1806-1869)**. [From Mühlhausen to the New World—the Bridge Builder J. A. Röbling]. 2006. 193 pp. illus. In German. 23 Euros ppd. to U.S. Order: Dr. Andreas Kahlow, Fachhochschule Potsdam, Pappelallee 8-9, 14469 Potsdam, Germany. The most thorough account yet of the professional life of the 19th century's pre-eminent suspension bridge designer and builder, from the earliest student years in his native Mühlhausen and advanced technical schooling, to his emigration to the U.S. (1831), to detailed descriptions of each of his structures. Every phase of this remarkable career, completed projects, and the manufacture of wire rope is examined in extensive detail by a group of eminent German and American scholars. Illustrations include many never-before published documents and early sketches of Roebling's evolving thought on suspension bridge design and erection.
- ♦ Theodore Greene, ed. **John A. Roebling: A Bicentennial Celebration of His Birth, 1806-2006**. ASCE, 2006. Ten papers presented at the ASCE's Roebling Symposium, Brooklyn, Oct. 27. Papers deal with the engineer's life, work, colleagues, and the work of his sons.
- ♦ Rick Lavender. **Banks County (GA) Students Work to Restore Covered Bridge**. *Gainesville Times* (Dec. 29, 2006). Details of successful program of high-school students volunteering with local contractors to restore and maintain Hyder Bridge (1910) near Lula.
- ♦ Henry Petroski. **Waldo-Hancock Bridge**. *American Scientist*, vol. 94 (Nov.-Dec. 2006), pp. 498-501. History of David Steinman's landmark suspension bridge in Maine, opened in 1932 and replaced in 2006 due to irreparable deterioration of the main cables. Case study of a bridge once heralded as an engineering masterpiece growing obsolete and neglected over time.

MISC. INDUSTRIES

- ♦ Bjorn L. Basburg. **The Shore Whaling Stations at South Georgia: A Study in Antarctic Industrial Archaeology**.

Novus Forlag (Oslo), 2004. 226 pp. Six whaling stations that operated c.1904-1960, considering their layout and design, production, power supply, workshops, and living quarters. Rev.: *T&C* (July 2006), pp. 694-5.

- ♦ Brenda J. Buchanan, ed. **Gunpowder, Explosives and the State: A Technological History**. Ashgate, 2006. 456 pp., illus. \$99.95. Collection of essays explore the production of saltpeter and gunpowder in Europe from 1600-1900, the overseas transfer of technology from Europe, and the securing of gunpowder supplies as fundamental to the power of the state and imperialism.
- ♦ Monica Davey. **With Loss of Maytag, Town Faces the Loss of Its Identity**. *NY Times* (June 7, 2006). Whirlpool Corp. is closing the plant in Newton, IA, where F. L. Maytag founded the company famous for washing machines and other household appliances in 1893.
- ♦ John Erroll and David Erroll. **The Glory of American Locks**. *I&T* (Fall 2006), pp. 22-7. Bank locks from the 1850s through WWI, marvels of ingenuity and works of art.
- ♦ Susan Green and Don Peloubet, eds. **Springs for Horse-Drawn Vehicles**. Astragal, 2005. 254 pp., illus. \$40. Comprehensive book on the subject of springs for the running gears of horse-drawn vehicles. Compiles and analyzes data from old trade journals and more than 2,000 U.S. patents. Several classic works are reproduced, including *Manufacturers of Steel Carriage Springs* (1881). Also covers some of the historical technology of making steel, history of the various spring designs, and some of the machinery used to make springs.
- ♦ Myles W. Jackson. **Harmonious Triads: Physicists, Musicians, and Instrument Makers in Nineteenth-Century Germany**. MIT, 2006. 368 pp., illus. \$40. Instrument makers provided physicists with experimental tools, and physicists' research led directly to improvement in musical instrument manufacturing and assisted musicians in their performances.
- ♦ Keith Kohlmann [SIA]. **Bucyrus: One Piece at a Time**. *Railroad Model Craftsman* (Apr. 2006), pp. 75-83. History of Bucyrus-Erie's S. Milwaukee Plant with descriptions of how mining shovels and drills were manufactured and shipped by rail. Many historic photos from the Bucyrus archives and a full-page plant map. Also, follow-up article: **Modeling Flat Car Loads of the Bucyrus-Erie Plant** (May 2006), pp. 74-7, showing how author translated historic views into scale models.
- ♦ Anita Lahey. **The Better Clothespin**. *I&T* (Fall 2006), pp. 38-43. The tried-and-true versions work just fine, but that hasn't stopped basement inventors to the world's leading designers from searching for improvements to a very humble device.

ABBREVIATIONS:

I&T = American Heritage of Invention & Technology
T&C = Technology & Culture, Journal of the Society for the History of Technology

Publications of Interest is compiled from books and articles brought to our attention by you, the reader. SIA members are encouraged to send citations of new and recent books and articles, 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 SIA Newsletter, 305 Rodman Road, Wilmington, DE 19809; phsianews@aol.com.

2006 SIA Fall Tour Review

Youngstown was one of the centers of the iron and steel industry in Ohio with the first charcoal furnace in blast in 1803. The industry took off in the mid-19th century with the discovery of local deposits of coal, iron ore, and limestone. By the 1920s, three fully integrated steel operations could be found in Youngstown including Republic Iron & Steel, U.S. Steel, and Youngstown Sheet & Tube. But in the now classic rust-belt story, the steel industry collapsed starting about 30 years ago, and today is but a mere shadow of its former self. The SIA's Fall Tour took in the physical remnants of Youngstown's industrial heritage, now symbolized by largely vacant factory complexes and brownfields, but some active operations that continue to fill niche markets. Participants also ventured to Ashtabula, Erie (PA), and other nearby towns to view historic transportation and engineering sites.

On Wed., Sept. 27, 40 SIA members converged on Erie for an early-bird tour led by members of Civitas, a local collaborative working on public art and historic preservation (SIAN, Spring 2006). The goal was to give members a chance to explore Erie's industrial bay-front and boost Civitas's efforts to bring attention to the potential of preserving Erie's industrial and commercial architecture, which has been threatened by some recent redevelopment. Sites visited by the early-bird group included the city's steam-powered electric generation station (now housing the **Erie Maritime Museum**), the **Erie Water Authority** and its 1912 filtration plant, **Union Station**, the **Museum of Erie GE History**, and the former **Skinner Engine**, **Bucyrus Erie**, and **Lovell Manufacturing** factory complexes. Lovell now houses the **Erie Book Store**, which was host to a social gathering and light refreshments, followed by dinner in a restaurant also in the Lovell complex.

The Erie group traveled across the OH-PA state line and about 75 miles southwest to Youngstown on Thursday, Sept.

28, for the Fall Tour's opening reception proper at the **Youngstown Historical Center (The Steel Museum)**. Here the rest of the participants—numbering about 100 in total—viewed the exhibits on the steel industry and the steel workers' memorial. Donna DeBlasio, a professor at Youngstown State University who wrote the introduction to the Fall Tour guidebook, presented an informative overview of Youngstown's industrial history from its origins as a rural village to its peak as an urban center with more than 20,000 steel workers in the 1920s. She recounted the industry's technological development, as well as its struggles, including labor unrest from the 1910s to 1960s, and the economic crisis when the mills began to shut down in the late 1970s. The reminders of the city's once strong dependence on the steel industry remain in the empty factory complexes, run-down neighborhoods of workers' houses, and brownfields yet found along much of Youngstown's Mahoning River valley.

On Friday and Saturday two busloads of SIA members

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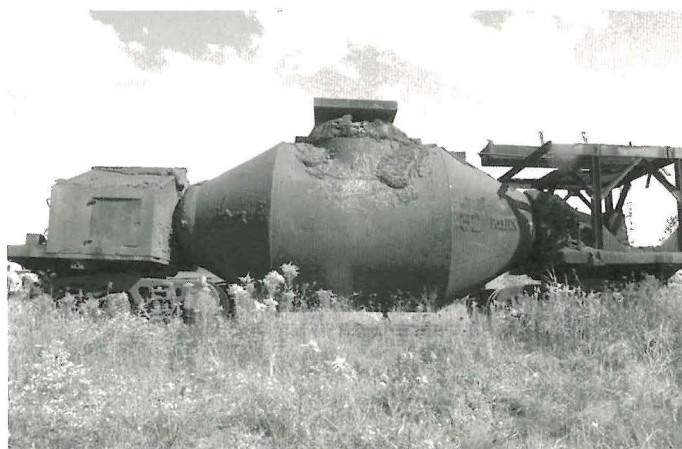
Ashtabula Harbor.

P. Harsberger

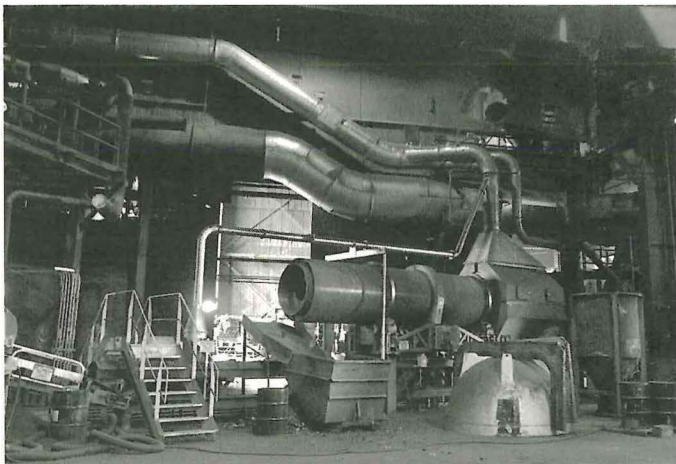


A volunteer cleans the 1896 French-made fourth-order Fresnel lens from the Ashtabula lighthouse, now on display at the Ashtabula Marine Museum.

Michael Hoyt.



A torpedo car in a field of wildflowers at the former Youngstown Sheet & Tube, one of the many reminders of Youngstown's steel heritage.



The furnace at Ellwood Engineered Castings.

followed separate tour itineraries with some sites in common. A highlight on both tours was **McDonald Steel**, an outstanding example of an early-20th-century rolling mill that has adopted some advanced engineering practices allowing it to remain competitive. McDonald is housed in a former U.S. Steel plant established between 1909 and 1918. By 1932, the plant had 11 rolling mills in operation including four hoop mills, a narrow strip mill, a band mill, four bar mills, and a shape mill. In 1979, U.S. Steel announced plans to close McDonald but a group of investors stepped in to organize the new company and lease a portion of the works.



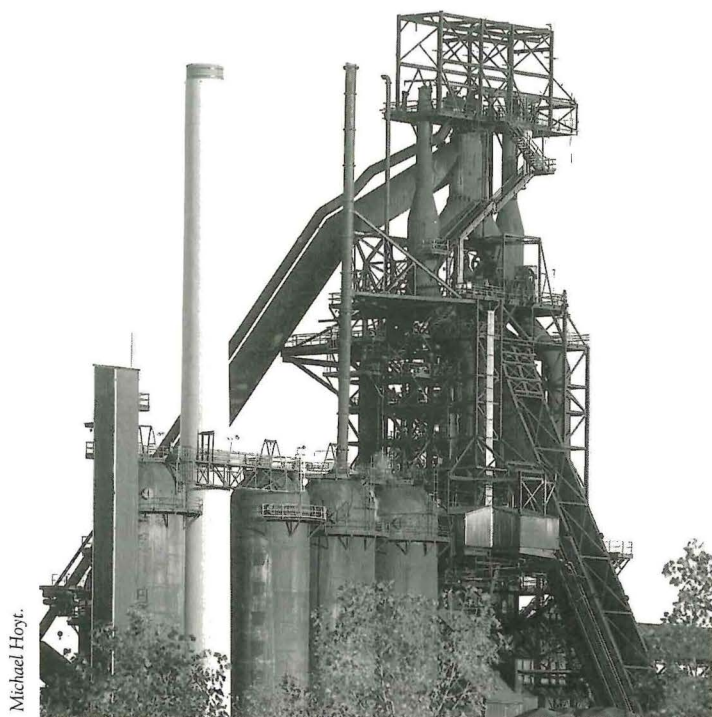
Michael Hoyt.

Machining a roll at McDonald Steel.

Today, McDonald regularly operates a 14" cross-country shape mill, consisting of ten two-high stands and one three-high stand that first went into operation in 1926. Also operable is an 8" Belgian bar mill with continuous roughing stands and a looping finishing train requiring some hand-caught passes. Some of the SIA tour groups observed the 14" mill in action, while others saw workers changing out the rolls. Steel billets are heated in continuous sloped-hearth gas furnaces and discharged through pinch rolls before they enter the 14" mill. The first five stands of the mill are aligned in tandem, while the last six stands form a cross-country pass line with transfer tables and chutes. Bars are rolled in one stand at a time. This arrangement allows McDonald to roll asymmetric shapes where spread and elongation are unequally distributed on opposite sides of the bar. Designing the profiles of multiple rollers to create complex shapes is a craft, and one of the high points was time spent with McDonald's designer in the pattern and machine shops where a vast "library" of wood patterns and cross sections records all of the shapes rolled at the mill since the early 20th century.

WCI Steel, the former Republic Steel, in Warren is the area's only integrated steel mill remaining in operation. The SIA buses drove by the blast furnaces and the coke ovens, which have been spun off as a separate operation. The groups then broke out into a series of process tours of survivor industries that have adapted to the 21st-century economy. **Coronado Steel** provides an excellent example of small-scale adaptation. The firm, which now employs about 30, began in the early 1960s when a handful of steel workers started a foundry in a former church social hall. The foundry uses sand molds to form a wide variety of high-alloy parts for customers throughout the Midwest.

Coronado receives many of its patterns from **Liberty Pattern & Mold**, established in 1917, creating patterns for a variety of regional businesses, including foundries, tool and parts manufacturers, architectural designers, and petrochemicals. Liberty maintains many of its old belt-driven machines, but also uses up-to-date computer-aided design



Michael Hoyt.

The blast furnace at WCI Steel (former Republic Steel) in Warren, OH.

and tools, giving it the flexibility to adapt to customer requirements. Customers can place orders using computer files, a blueprint, an existing part, or simply an idea, and Liberty's patternmakers will create the pattern. Most of the patterns are wood, but they also use Styrofoam, composites, and urethane.

Tour participants who did not have a chance to visit Coronado or Liberty saw a vastly larger operation at **Ellwood Engineered Castings**. Established in 1992, Ellwood is in the former Valley Mould & Iron foundry. It produces gray- and ductile-iron castings weighing up to 100 tons, making it one of the largest foundries of its type in the U.S. Castings are produced for the energy, machine tool, and mining industries, including parts for large pumps and compressors. Ellwood's facility has three 55-ton induction furnaces capable of melting 900 tons of iron per day. Following-up on Ellwood, this group proceeded to **Flex-Strut**, a manufacturer of steel curtain walls, channels, and struts, and a small machine shop, **New Era Machine**, which supports Flex-Strut's operations.

Another of Youngstown's small-scale metal-working firms is **Regal Tool & Die**. The machine shop, which is in a one-story cinder-block building, houses a variety of traditional machine tools for producing dies for stamping, piecing, blanking, and forming metal. At another building, workers stamp a variety of products, including metal stools and camera parts. Participants had a detailed tour led by company president Gary Kiraly, who stressed the ability of the small shop to adapt and produce high-quality, inexpensive parts.

At **General Extrusions**, SIA had the opportunity to compare the process of aluminum extrusion against the forming of steel at McDonald earlier in the day. In the 1940s and 1950s, Youngstown became the center for a number of small, family-owned firms that specialize in aluminum extrusions, basically pushing aluminum ingots through dies to form parts for a variety of products, including appliances, toys, machines, and siding. Management discussed the difficulties of competing against foreign firms that have lower



P. Harshbarger

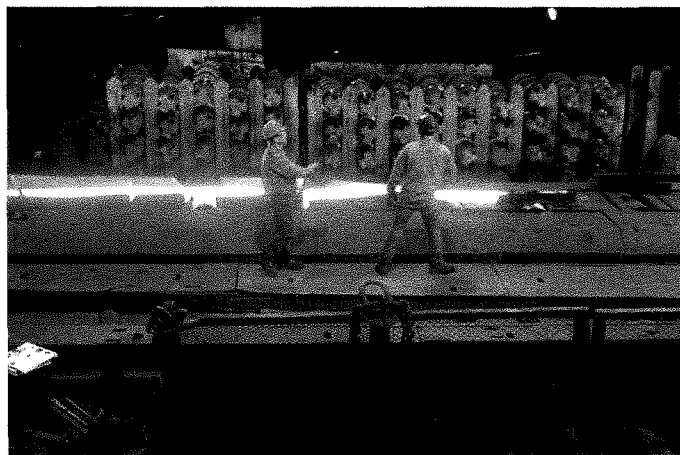
2006 Fall Tour participants at the Tod Steam Engine Heritage Park with the partially assembled engine in the background.

labor costs, but stressed their ability to thrive due to their single-source convenience, good working relationship with the unionized workforce, and quality assurance that exceeds industry standards.

Rounding out Friday's process tours was the **General Electric, Ohio Lamp Plant** and the **L. B. Foster Company**. GE's facility, which has been in operation since 1912, produces incandescent spotlight and floodlight bulbs. Leroy Foster founded the company that bears his name in 1902 in Titusville (PA) to provide for the construction of rail spurs for mines, logging camps, and quarries. Foster continues that tradition today pre-fabricating frogs, switches, turnouts, crossovers, and other components for rail line construction. The SIA was able to observe workers laying out a switch, which will then be disassembled and shipped to a project in Alabama.

Both of Friday's tours ended the day at the 1914 **Tod Steam Engine** (SIAN, Winter 2005). There they were greeted by Rick Rowlands [SIA], the founder and mastermind behind the Tod Engine Foundation, a project that rescued the massive cross-compound stationary steam engine that once powered the mills at the Brier Hill Steel Works. The William Tod Co. of Youngstown was a noted designer and supplier of machinery to the steel industry. By sheer

(continued on page 24)



Michael Hoyt.

The 14" cross-country shape mill in operation at McDonald Steel near Youngstown.



Dennis Furbush

The 1865 Cherry Valley Coke Ovens (NR) in Leetonia have been preserved in a park.

An Unusual Marriage of Truss Forms

The Hudson River Crossing at Mechanicville, NY

Much has been written about the two-decade-long effort, and accompanying scandals, of carving the Hoosac Tunnel through Massachusetts' Berkshire Mountains to provide a more direct east-west railroad route between Boston and the Hudson River, and the industrial cities along the Great Lakes. Strangely, information about the bridge across the Hudson, an indispensable link in the concept, has remained obscure.

Although it wasn't officially opened for traffic until July 1, 1876, the first train had crawled cautiously through the Hoosac Tunnel on February 9, 1875. The tunnel, then the longest in America and second longest in the world, is a 4.75-mile-long bore. Its eastern portal is in Florida, MA; its western in North Adams. From there the track snaked westward, generally following the Hoosic River until it reached the east shore of the Hudson, where it makes a dog-leg north before crossing the river over a double tracked, 1,915-ft. multi-span bridge to Stillwater Junction, situated just north of Mechanicville.

Known as the Mechanicville Bridge, the first iteration of the crossing was built in 1878-9 by the Phoenix Bridge Co. at a cost of \$94,532 for the Boston, Hoosac Tunnel & Western RR. It originally consisted of 27 deck-truss spans—nine spans at 25 ft., eight at 50 ft., one at 84 ft., and nine at 134 ft.

All of the spans were supported by pairs of trusses, with the deck framing resting on the top chords. The 25- and 50-ft. spans were Warren trusses, the 84-ft. span was a Pratt truss, and the nine 134-ft. spans were Whipple trusses.

Prior to the opening of the Mechanicville Bridge, trains had to roll south to cross the Hudson over the Green Island Bridge at Troy, or even further south to the Greenbush-Albany Bridge. Although the tunnel had opened in 1876 and the bridge was completed in 1879, it wasn't until 1882 that trains were able to take full advantage of both the tunnel and bridge to reach Rotterdam Junction, a bit west of Schenectady, where the BHT&W lines connected to the existing main lines to Buffalo.

The Fitchburg RR, which originally ran from Boston west to Fitchburg, MA, acquired the BHT&W in 1887. Only fifteen years after its construction in 1879, the bridge proved inadequate to the task of carrying the now heavier locomotives and coal cars.

Reinforcing the nine Whipple trusses comprising the main spans of the bridge presented the engineers with several critical issues. The Whipple configuration produces a relatively light and flexible truss; therefore, adding another Whipple truss to each span would not provide the necessary strength and rigidity without making it deeper than the



Photograph, circa 1902, of the 1894 bridge with Whipple trusses supplemented by the insertion of Warren trusses.



The current Mechanicville crossing. Three parallel Warren trusses support each span.

Author's postcard collection

Courtesy of Railpace Newsmagazine

existing pair. Since the bridge was a deck-bridge over navigable water, they could not add deeper trusses than the existing ones without impeding shipping.

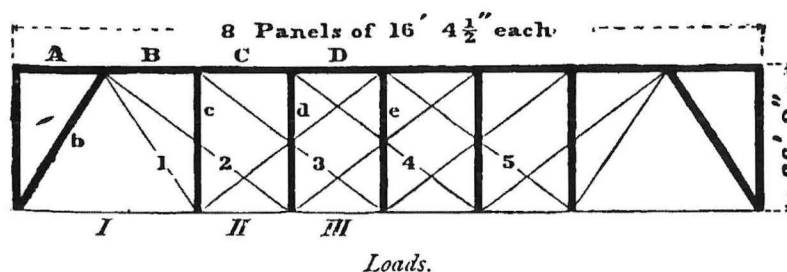
The Boston Bridge Co., contractors for the Fitchburg RR, placed Warren trusses under the existing tracks, centering them between the pairs of existing Whipple trusses. What is unusual about this solution is not the addition of a third truss, but the selection of a truss with a configuration different from those of the side trusses. The Warren configuration of contiguous triangles produces a stiffer and stronger truss than a Whipple truss of the same depth. Therefore, it was possible to design a Warren truss that could provide the necessary additional strength without making it deeper than the existing Whipples. Since the bridge was a deck-bridge, the truss could be placed below the tracks without interfering with train movements.

Because strengthening the bridge was not accomplished by adding another Whipple configuration to each span, the Boston Bridge Co.'s 1894 upgrading of the original 1879 bridge produced a distinctive and visually interesting structure. Adding the sturdy Warren trusses was a practical solution. Its placement between the delicate Whipples produced a unique marriage of forms with a whimsical charm of its own.

This picturesque, eminently logical bridge stood for only a quarter of a century until its replacement with new double-track, steel deck trusses. Plans for this bridge, dated Mar. 30, 1914, were unearthed by Vern MacPhee, chief engineer for Guilford Transportation, the current owners of the crossing. However, it is not clear when the structure was actually

One hundred and thirty-four foot Spans.

Nine spans, double track, deck, Whipple truss bridge. Length of each span for computation 131' 0". Height, center to center of chords, 26' 0". Eight panels of 16' 4½" each. Two trusses.



*Drawing of the original 1878 Whipple trusses, BHT&W
Mechanicville Bridge. From Report of the Board of Railroad
Commissioners of the State of NY, 1891.*

built. It may not have been erected until 1918-1919, when the Boston & Maine annual report indicates that bridges were replaced to accommodate the new and much heavier Santa Fe-type locomotives. This structure is still operational, now part of the PanAm Railway Division of Guilford Transportation. It is composed of three parallel Warren trusses—a more traditional, but less exotic, solution.

*David Guise
with assistance from Alden Dreyer,
Paul Loatman, and Jim Stewart*

Rehabilitation of the Hadley Bow Bridge

Another Point of View

In the Fall 2006 issue of *SIAN*, Mark Kanonik described rehabilitation of the iron, half-deck, parabolic truss bridge built in 1885 at Hadley, NY by the Berlin Iron Bridge Co. The bridge at Hadley was arguably one of the most unusual and one of the most visually striking small highway bridges surviving from the last quarter of the 19th century. The parabolic truss itself was an oddity of its time, and the main span of the Hadley bridge with its arched upper chords mirrored by its lower chords and bisected horizontally by the deck was clearly outside the mainstream of even that generic form. For all of these reasons, it qualified as a national treasure and deserved the most sensitive of treatments to return it to service. In the judgment of many that did not happen.

The Hadley bridge was neither restored (i.e., returned to its original state) nor rehabilitated (i.e., returned to service, though not necessarily in its original state). Rather, it was replaced by a new freestanding steel superstructure and concrete deck on altered masonry abutments and pier, capable

of supporting all legal truck traffic, with the old trusses attached to the exterior floor beams where they support their own weight, but little more. A visually intrusive modern guide rail was bolted to the new concrete deck. The net effect has been to lose an important contributing element to the historic importance of the original structure, the delightfully light and airy appearance so characteristic of large metal truss highway bridges of its period and a defining visual feature of this bridge at this location.

Kanonick, an engineer, blames this outcome on unnecessarily conservative design standards resulting from an unreasonable fixation on liability. Whether one agrees or not, there is a more fundamental reason why this project failed to live up to its potential as a preservation project.

An axiom of historic bridge preservation is that success is problematic without support of the local community. In the case of the Bow Bridge that support was slow in coming, and

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A NEW CABLE-STAY FOOT BRIDGE ON B&O OLD MAIN LINE

The first revenue-producing section of the pioneer Baltimore & Ohio RR extended some 14 miles westward from Baltimore to Ellicott's Mills (since 1867 Ellicott City), the western segment closely following the valley of the Patapsco River. The line was constructed largely in 1828-29. The board of directors, intending that the undertaking be an absolutely permanent one, determined that all major structures—especially bridges—were to be as durable as possible and thus of stone masonry.

The Patapsco itself was crossed at the village of Ilchester, two miles SE of Ellicott's Mills, on the handsome four-span granite Patterson (for Wm. Patterson, B&O board member and Baltimore merchant) Viaduct (a bridge, really, not a viaduct) having two 55-ft.-span river arches and at each end a 20-ft. arch over a common road. The bridge was so heavily damaged by the disastrous flood of July 1868 that all but the western road arch had to be removed. This has survived to the present day. Service was resumed fairly quickly over a temporary timber trestle that served also as the falsework for a ca. 160-ft. single-span cast- and wrought-iron Bollman through truss (Mark II) completed the following year. This was the B&O's then "house" bridging system, the invention (1852) of Wendel Bollman, Baltimore civil engineer and the RR's Master-of-Road. Later in the century a short-lived conventional steel Pratt truss (Mark III) was erected on the same masonry.

Early in the 20th century the B&O undertook a major improvement of the "Old Main Line" by removing numerous of its kinks. At Ilchester, a rock spur was tunneled and a new Patapsco crossing made by an adjacent Pratt truss of 1903, still in service. This in place, the old crossing was abandoned and the Pratt truss (Mark III) removed, leaving the Patterson Viaduct's single road arch to be overtaken by undergrowth.

A splendid *fourth* crossing on the old alignment has just been completed, not for rail service but for pedestrians,

bicycles, wheel-chairs, &c, closing a final gap in "The Grist Mill Trail Extension" between Catonsville and Ellicott City, and with a connection to Annapolis, Maryland's capital. The new bridge was designed by Carroll Vogel,* CE, principal of Sahale, LLC of Seattle, which also fabricated and erected the structure. The 164-ft. span originally was to have been a conventional suspension bridge, but Vogel, seeing a photo of the Bollman truss and much taken by its radiating diagonal tension stays, determined that a cable-stay structure would do the job as well and also serve as an interesting reflection of the earlier span; hence the present scheme. It rests on the Bollman bridge's abutments, themselves reconfigured from the Patterson Viaduct masonry. The rolled members of the towers and deck are of Cor-ten steel, which will weather to a natural rust-like patina not requiring painting. The deck is of treated wood plank.

For reasons known only to themselves, for some years the new bridge was resisted by a small but vocal cohort that in the end was overwhelmed by a more rational assemblage, powerfully instrumental in which was celebrated Baltimore-area preservationist and long-standing SIA member Charles Wagandt, who, with fellow member John Teichmoeller took part in the ribbon-cutting ceremony.

**who is no known relation to . . . Robert M. Vogel*



Robert Vogel

Cable-Stay Footbridge, 2006.



Courtesy B&O Museum Archives

Patterson Viaduct, 1829-1868.



Courtesy Smithsonian Institution

Bollman Truss, 1869-ca.1890.

Hadley Bow Bridge (continued from page 21)

when it did come it was with conditions that virtually precluded the best preservation option. Those conditions were driven by a desire of the Hadley community, represented by its supervisor and town board, to have a fully trafficable crossing of the Sacandaga River at Hadley; the community had been without a crossing of any sort at that location since the bridge was closed in 1983. Both Saratoga County, which owns the bridge, and the Town of Hadley, where it is sited, had resisted early efforts to have the bridge restored as a pedestrian and bicycle crossing. Unable to justify a fully trafficable bridge on its own merits, local officials took the opportunity afforded by the federal TEA-21 grant to piggyback their transportation needs on what had been theretofore advocated as a preservation project.

How one views the outcome of the Bow Bridge project depends on where one stands. Many in the preservation community, which included many of the residents of Hadley, have a right to feel betrayed. It was the preservation community that first brought the bridge's historical importance to the county's attention and mobilized public support for saving it; that community funded the feasibility study that determined that the bridge was salvageable, and they drafted the proposal for the grant that funded the final project. What they got was not a preservation project with a transportation benefit but a transportation project with a preservation element. In fact, the historic importance of the old bridge was exploited to solve a transportation problem. A cynic might describe the result as "fake preservation" wrapped around a new bridge that from the start is functionally obsolete, i.e., one that accommodates only slow, one-way traffic with treacherously angled approaches.

Others can rightfully look at this project as a creative engineering solution to what had essentially been a political problem: how to reconnect two halves of a community separated for 23 years by the forced closing of the old bridge and at the same time preserving the essence of a national treasure. Tourists can still frame appealing art and photography. Students can still learn about structural iron, that 19th-century transition material between wood and steel. Bridge buffs can still appreciate how compression in the graceful arch of the bridge's upper chords is countered by



The Hadley Bow Bridge in 2006, following completion of the project that resulted in a new steel superstructure with the 1885 trusses attached to the exterior floorbeams.

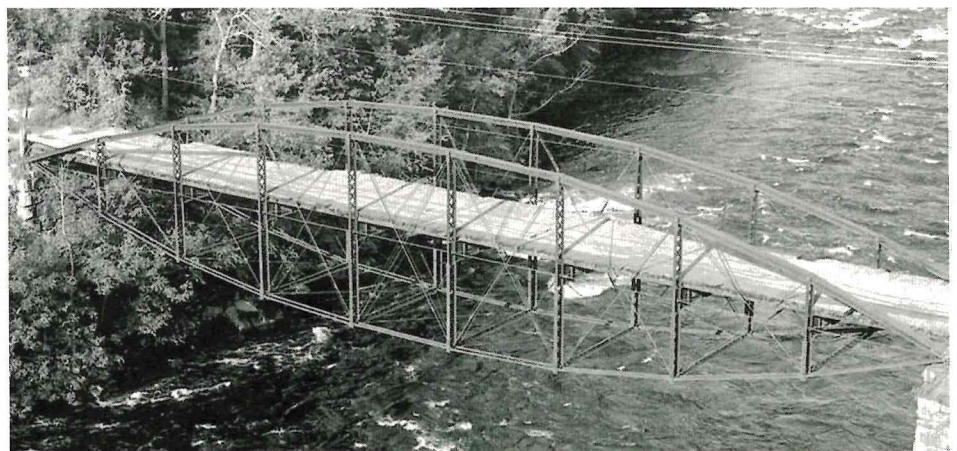
tension in the eye bars of its lower chords. And, the engineering innovation that resulted in the bridge's trusses being braced at mid-level by the deck, a design that precluded the need for expensive portals and overhead bracing, and which may very well have won the contract for Berlin Iron Bridge, is still clear though altered in detail.

It is a reality that preservation lives in a world of competing values. It is also a reality that those who find themselves trying to negotiate among those values are often learning on the job.

The story of how the Bow Bridge has been able to survive at all is complex, but one that deserves thoughtful attention as a case study in compromise. Hopefully, someone will step forward and do the work so that others might approach similar projects with more skill and less acrimony. Those lessons could be the Bow Bridge's most important legacy. Anyone for a Master's thesis?

Bill Chamberlin

The Hadley Bow Bridge in 1994, prior to the rehabilitation project.





At L. B. Foster Co., a worker explains pre-fabricating a switch. The pieces will be match-marked, disassembled, and then shipped to a railroad in Alabama.

luck, Rick discovered the engine in 1995 and was able to convince the owner not to scrap it. Over the past decade, Rick and his team of volunteers have been able to raise funds to disassemble and salvage the parts and purchase a tract of land on which to restore and exhibit the engine with the goal of someday seeing it operate again. It's an inspiring story of how a small group of individuals can make a difference preserving a significant piece of industrial heritage: to learn more about the engine, purchase a DVD on its history and operation, or to make a donation (www.todengine.org).

On Saturday, the Fall Tour traveled north from Youngstown to Ashtabula and Trumbull counties with an emphasis on transportation and engineering. Again, the two bus groups followed separate itineraries. One group began the day at the **Conneaut RR Museum**, housed in a 1900 NY Central depot. This was followed by a driving tour of picturesque farmland, fall foliage, and stops at five of Ashtabula's County's 17 surviving covered bridges. The county has developed a covered bridge driving-tour brochure and is host to an annual covered bridge festival during the second week of October. County engineer John Smolen, Jr. was on hand to guide the SIA. The afternoon was spent on a tour of 19th-century vernacular architecture in Kinsman, including the **Clarence Darrow House** (ca. 1820), as well as an introduction to the local clock-making industry which thrived during that era.

The second of Saturday's tours began the day at **Ashtabula Harbor** and the **Kinder Morgan Pinney Dock**, a facility with two, 2,000-ft.-long piers, established in the 1950s and specializing in bulk commodities including iron ore, aggregates, crude rubber, steel scrap, limestone, coal, and cement. This group also took to the countryside to tour a series of covered bridges, and then returned to Ashtabula to spend the afternoon at the **Ashtabula Marine Museum**,

housed in the 1871 residence of the Ashtabula lighthouse keeper overlooking the harbor. Museum volunteers were on hand to give a detailed tour; one of the highlights was a scale model of a Hulett ore unloader.

On Saturday night, the SIA enjoyed a banquet in the 1925 First Unitarian Universalist Church. Tom Leary [SIA] of Youngstown State University gave a presentation on his recent trip to Poland to study industrial heritage and develop a YSU historic preservation course in cooperation with scholars in that country. Particularly poignant were his observations about the intersection of industrial heritage and WWII forced-labor camps.

On Sunday, about 40 SIA members stayed over for an architectural walking tour of downtown Youngstown and then a bus tour to some of the sites that couldn't be fit into the prior days' itineraries. The first stop was the former **Youngstown Sheet & Tube Campbell Works**, where attempts are being made to re-use some of the buildings as part of an industrial park. The group saw a small collection of steel industry rail equipment owned by the Mahoning Valley RR Heritage Assn., including a torpedo car and a slag ladle car. Following an extensive driving tour of workers housing, the group visited the **Cherry Valley Coke Ovens** in Leetonia (SIAN, Winter 1996). Established in 1865, the 200 beehive ovens went out of operation in the 1930s and are now preserved in a park. Sunday's last stop was the 1845-46 **Lantermans Mill**, a restored grist mill. Erin Timms [SIA] provided background on an archeological dig that explored the remains of the nearby **Mill Creek Iron Furnace** in 2003.

The SIA's thanks go to the sites that welcomed us, the Northern Ohio SIA Chapter, and the volunteers who assisted including Lisa Austin, April Caruso, Charles Davis, Donna DeBlasio, Tom Leary, Rick Rowlands, Libby Sholes, Erin Timms, and Ted Vasbinder, Jr.

Patrick Harshbarger

2007 Fall Tour, Ely, Nevada

The SIA will explore the Silver State's mining heritage, Sept. 27-30. Host for the Fall Tour is the Nevada Northern Ry., established in 1905 to support eastern Nevada's copper mines. The SIA's visit will include an in-depth tour of the Nevada Northern's shops in East Ely, among the most complete shop complexes surviving from the steam-era in the U.S. The Nevada Northern operates steam-powered excursions, and the SIA will hold a banquet aboard the dining car. The Fall Tour will also visit the Robison copper mine and the 1870s mining towns of Hamilton and Treasure Mountain. Registration materials will be sent to members in mid-2007. ■

CONFERENCES & WORKSHOPS

Pioneer America Society: Assn. for the Preservation of Artifacts & Landscapes (PAS:APAL) will hold its 39th annual conference in Hagerstown, MD, Oct. 10-13. *Landscapes in Stasis—Landscapes in Change: Two Views of West Central Maryland Cultural Landscapes* is the conference theme, with a focus on preserving agricultural landscapes and analyzing how transportation systems have historically changed landscapes. Two day-long tours are planned. The Thursday tour will examine the regional transportation systems with visits to the National Road, C&O Canal, B&O Roundhouse in Martinsburg (WV), and Harper's Ferry. The Saturday tour will visit the Antietam Battlefield to view examples of pre-1865 farmsteads that are not open to the general public. The conference committee is soliciting proposals for papers, special sessions, and panel discussions on the conference themes. However, presentations on all topics related to material culture that are of interest to PAS:APAL are welcome. Presenters must be members of PAS:APAL. Abstract deadline is July 2. Info: Paula S. Reed, 1 West Franklin St., Hagerstown, MD 21740; (301) 739-2070; paula@paulasreed.com.

The National Park Service's 2007 workshop on archeological prospection techniques, entitled **Current Archaeological Prospection Advances for Non-Destructive Investigations in the 21st Century**, will be held May 14-18 at the HAMMER Training Center, Richland, WA. Lodging will be at the Guest House, Richland. This will be the 17th year of the workshop dedicated to the use of geophysical, aerial photography, and other remote sensing methods as they apply to the identification, evaluation, conservation, and protection of archeological resources. The workshop this year will focus on the theory of operation, methodology, processing, interpretation, and hands-on use of the equipment in the field. Tuition: \$475. Applications: www.cr.nps.gov/mwac. Info: Steven L. DeVore, Archeologist, NPS, Midwest Archeological Center, Federal Bldg., Rm. 474, 100

Centennial Mall North, Lincoln, NE 68508; (402) 437-5392, ext. 141; fax: 437-5098; steve_de_vore@nps.gov.

Old West Mining Town Preservation Workshop, Virginia City, MT, July 9-13. The Heritage Conservation Network (HCN) is sponsoring a week-long, hands-on workshop on restoring, documenting conditions, and support of heritage tourism initiatives. Technical experts teach and guide participants in their work. No specific preservation skills are required, just the participant's interest and enthusiasm. Workshop fees include lodging, breakfast and lunch, instruction, insurance and materials. Info: www.heritage-conservation.net; (303) 444-0128.

National Canal Museum Spring Lecture Series. Free and open to the public, the Thursday lectures begin at 7:30 pm in the auditorium of Two Rivers Landing, 30 Centre Sq., Easton, PA.

Apr. 19. *Furnaces, Coal Breakers and Factories.* Photographer Henry Schmidt will present a slide lecture of his work photographically recording industrial landscapes, including Bethlehem Steel, Huber Breaker, and the Roebling wire works.

May 17. *The Early Industrial Sites of Pennsylvania's Wissahickon Valley.* Considered among the prominent historians of Philadelphia's early manufacturing development, Jane Mork Gibson [SIA] will explain the process that transformed the Wissahickon Valley from a wilderness to a thriving industrial center during the 17th and 18th centuries.

June 21. *Lehigh Valley Railroad.* Lecture and book signing by Mitchell Dakelman, the film curator for the National Railway Historical Society. He will autograph copies of his recently published book, *The Lehigh Valley Railroad in Color*, Vol. 4. ■

National Canal Museum Opens Emrick Technology Center

The Elaine and Peter Emrick Technology Center will open to the public on May 5. The building is located just west of the canal boat dock in Easton's Hugh Moore Park (tour site—2002 SIA Fall Tour, Lehigh Valley, PA). Through dynamic exhibits and education programs, the center will explore the Lehigh Valley's rich industrial heritage. Visitors will see the 26-ton stationary steam engine once used to power the Buehler Furniture Factory; learn the history of the paper drinking cup, the Dixie Cup Co., and its founder, Hugh Moore; and view a WWI cannon produced by Bethlehem Steel.

The Emrick Technology Center is a 14,000-sq.-ft., two-story brick building with reception area, exhibit space, offices, restrooms, and mechanical areas. A state-of-the-art archives and library on the second floor will provide

researchers with increased access to the museum's collections. The building is modeled after a 19th-century mill building, typical of those once located along the Lehigh Canal.

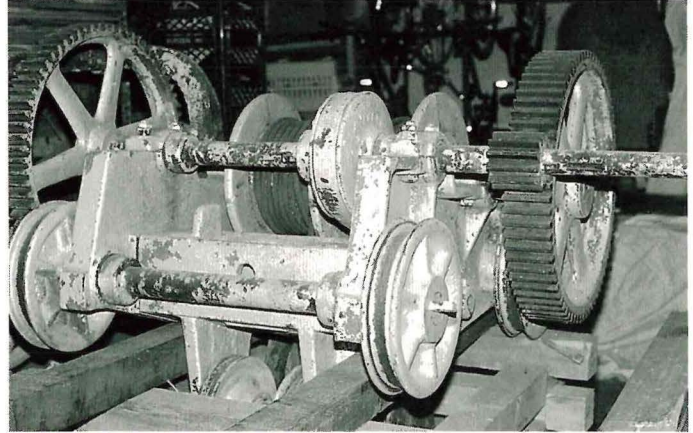
The inaugural exhibit, "Treasures from the Collection," presents over three decades of collecting by the staff of the National Canal Museum as well as artifacts on loan from private collectors. The museum's holdings have evolved from the collection of the Pennsylvania Canal Society in 1970. Today, the collections encompass hundreds of thousands of artifacts, documents, printed materials, images, and films that focus on the Lehigh Valley and America's transportation and industrial heritage. Lance Metz [SIA], staff historian, has led many of the efforts to develop this outstanding collection. ■

NOTES & QUERIES

1870s Iron Industry: Trade Publications and Associations. For a Master's thesis on a furnace site in Ellis County, KY, ca. 1868-1875, information in period trade publications is sought. Was the furnace described, discussed, or advertised, or were the owners members of industry trade groups? Research has already been completed in *Iron Age*, but for other publications or suggestions, please contact, Patrick Thompson, thomp@email.uky.edu.

Help Wanted Identifying Hoist Manufacturer. *The hoist was salvaged from a building constructed in 1911 at Rice University (Houston, TX). It bears no builders plate or other marks except "HB93" or perhaps "HB98" cast into the frame. It was part of an overhead bridge crane that was manually operated by three chains, but it seems to have seen very little use. The owner, who salvaged the hoist during the building's renovation, is seeking any information on the hoist's manufacturer, capacity, historical value, and details of operation. Mark Kapalski, 5503 W. 43rd St., Houston, TX 77092.*

Correction. Pauline Desjardins' last name was misspelled in the *SIAN* (Summer 2006). Pauline won the 2006 Vogel Prize for outstanding scholarship in a journal article to appear in *IA: The Journal of the SIA* for her article on Montreal's Lachine Canal. ■



SITES & STRUCTURES

Preservation of New York City's **High Line**, the 1.5-mile-long freight railroad viaduct (1929-34) on Manhattan's west side (*SIAN*, Spring-Summer 2004), received more good news late last year when the Whitney Museum and the city signed an agreement advancing plans for a new art museum at the southern end of the High Line at the intersection of Gansevoort and Washington streets. The city currently has projects underway to rehabilitate the High Line as a pedestrian walkway and park. It is hoped that the museum will attract a variety of park users to the High Line and create myriad opportunities for arts-related programming.—*Friends of the High Line e-Newsletter* (Nov. 28, 2006)

An explosion that started in a propane tank flattened the **Falk Corporation** warehouse in Milwaukee (tour site—2005 SIA Annual Conference), killing three workers and injuring more than 40 on Dec. 5. Falk is a manufacturer of large industrial gears and couplings and has a workforce of 700. Workers had begun evacuating the building after a leak was found in one of six large propane tanks, and most had escaped before the explosion occurred.

The **Roundhouse Railroad Museum** (tour site—1999 SIA Annual Conference, Savannah) has begun the process of restoring the large wooden doors of the Coach Shop Building (ca. 1920). The doors, which measure 8-ft. wide by 17-ft. high, each weigh half a ton. The original doors were composed of heart pine, some of which was salvaged

and reused. Southern yellow pine was used as replacement material for boards that had deteriorated beyond the point of reuse. The Coastal Heritage Society, which operates the railroad museum, plans to restore the Coach Shop Building for use as a children's museum.—*SavannahNow* (Dec. 15, 2006)

The **Augusta (GA) Canal National Heritage Area** celebrated its 10th anniversary. The heritage area was established by President Clinton on Nov. 12, 1996, and over the past decade has done much to turn the canal, which had languished and become heavily polluted, into a centerpiece of the city's revitalization with boat tours, trails, and interpretive centers. The canal, which was built in the 1840s and enlarged in the 1870s, provided water to power Augusta's mills, including the Confederate States Powder Works during the Civil War. Over \$16 million has been spent renovating the three-level canal.—*Augusta Chronicle* (Nov. 12, 2006)

Chicago lost a landmark building on Oct. 26, 2006, when fire destroyed the **Wirt Dexter Building** (630 S. Wabash—tour site, 1990 Annual Conference, Chicago). The fire was an accident caused by scrap workers cutting apart a boiler in the basement. The cast-iron frame building (1887) was designed by Chicago architects Adler & Sullivan. It originally served as the factory and showroom of the R. Diemel & Brothers furniture company. ■

IA ON THE WEB

Appalachian Coalfields (www.coalcampusa.com). Atlas of more than 400 coalfield towns and settlements in KY, PA, OH, VA, WV. Photos and background history of each, including views of mines, coke ovens, and vernacular architecture.

Canadian Printer & Publisher (<http://link.library.utoronto.ca/cpp>). Published beginning in 1892, *Canadian Printer & Publisher* was the national journal of the printing industry in Canada. Univ. of Toronto library has digitized and made searchable by keyword.

Domino Sugar Factory (www.plannyc.org/project-85-Domino-Sugar-Factory). Summarizes plans for redeveloping the refinery (tour site—2002 Annual Conference, Brooklyn)

IA in Belgium (www.vub.ac.be/SGES/ia/homepage.html). Web site accompanies the course “Industrial Archaeology and Industrial Heritage” taught at the Free University Brussels by Peter Scholliers. Links to museums, journals, associations, and a small selection of case studies.

Industrial Life Photo Collection (www.library.hbs.edu/hc/hf). Harvard Business School’s Baker Library features its collection of photos of workplaces taken in the 1920s and 1930s.

19th-Century Technology (www.historynow.org). Quarterly on-line journal for teachers and students features 19th-c. technology in its tenth issue (2006). Topics include the transcontinental railroad, photography, medical advances, and electric light. Interactive timeline of images of 19th-c. inventions. Sponsored by the Gilder Lehrman Institute of American History.

Plainfield on the Move (www.plainfieldlibrary.info/images/onthemove/index.html). Plainfield (NJ) Public Library presents an on-line exhibit of local transportation history including wagons, buggies, trains, trolleys, autos, and buses.

Rochester IA (www2.libraryweb.org). Monroe County (NY) Library System has many downloadable articles (ca. 1939-2006) with local IA content, including bridges, Erie Canal, and clothing industry. Click on “index” and the “table of contents” to review the list.

Tanker Mary Whelan (www.portsidetanker.blogspot.com). Photos and diary of the experience of repairing a historic ship in dry dock by Roebling Chapter member Carolina Salguero. The *Mary Whelan* is in Graving Dock No. 1 at the Brooklyn Navy Yard.

U.S. Steel’s Gary Works (www.dlib.indiana.edu/collections/steel). Series of more than 2,200 photos of the steel mill and corporate town, 1906-71.

“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 by e-mail: phsianews@aol.com. ■

CHAPTER NEWS

Northern New England held its annual fall tour and business meeting in central Vermont with visits to Vermont Plywood and the Vermont Verde Antique stone quarry. The hardwood plywood mill, now owned by Weyerhaeuser, opened in 1925. The stone quarry opened in 1952 and mines a green serpentine used in countertops, flooring, and exterior building stone and monuments.—*SIA New England Chapters Newsletter*

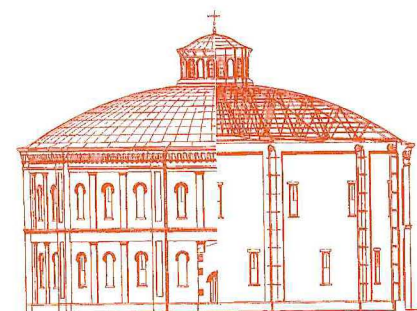
Oliver Evans (Philadelphia) members attended a presentation by Adam Levin on Nov. 14 on the topic of the environmental and industrial history of Philadelphia’s Frankford Creek. The chapter held its annual business meeting and banquet on Jan. 26.

Roebling (Greater NY-NJ) held its annual meeting and show-and-tell at Drew University on Jan. 28.

Samuel Knight (Northern CA) toured the U.S. Steel-Posco Industries (UPI) mill in Pittsburg in Jan. This state-of-the-art mill is a joint venture of U.S. Steel and Posco (formerly Pohang Iron & Steel) of Korea. The plant was established in 1910. UPI took over in 1986 and completed a major upgrade in 1989. The mill currently employs over 1,000. It is a steel finishing mill, transforming steel slabs, most of which are cast overseas, into a wide variety of cold- and hot-rolled products.

Southern New England was host of the 20th Annual Symposium on IA in the New England area on Feb. 24 at Clark University in Worcester, MA. Presentations included Maria Giannuzzi, *The Windsor Locks Canal*; Sara Wermiel, *Norcross Brothers, Contractors and Builders, of Worcester*; Gilmore Cooke, *The History of the L-Street Power Station, South Boston*; Cece Saunders, *Screens, Wires, and Traps: The Gilbert and Bennett Wire Factory, Georgetown, CT*; Alan Lutenege, *Lenticular Truss Bridges*; and Cranston Rogers, *Design and Construction of Early Underground Roadways*.

Wabash & Ohio (IN-KY) toured the Whitewater Canal (Matamora, IN) in Nov. The focus was on industrial water-power development along the canal. ■



CALENDAR

2007

May 9-12: Early American Industries Assn. Annual Meeting, New Orleans. Info: www.eaiainfo.org.

May 14-18: National Park Service's 2007 Archaeological Prospection Workshop, Richland, WA. See article in this issue. Info: www.cr.nps.gov/mwac.

June 1-2: Business History Conference Annual Meeting, Case Western Reserve Univ., Cleveland. Theme: Entrepreneurial Communities. Info: Carol Lockman, Box 3630, Wilmington, DE 19807; (302) 658-2400; clockman@hagley.org.

June 7-10: SIA 36TH ANNUAL CONFERENCE, PHILADELPHIA, PA. See article in this issue. Info: www.sia-web.org.

June 18-21: International Heritage Development Conference, Detroit. Sponsored by the Alliance of National Heritage Areas and the Motor Cities National Heritage Area. Tours, events, exhibits, and workshops. Info: www.Experience EverythingAutomotive.org.

Aug. 21-25: National Railway Historical Society Annual Convention, Chattanooga, TN. Rail excursions and tours. Info: www.chattrails.com.

Sept. 11-14: BigStuff2007, Dortmund, Germany. Info: www.iiconservation.org/news/calendar.pho?idnr=92 or BigStuff07@berghaumuseum.de.

Sept. 27-29: SIA FALL TOUR, ELY, NV. See article in this issue. Info: www.sia-web.org.

Oct. 10-13: Pioneer America Society: Assn. for the Preservation of Artifacts & Landscapes, Annual Meeting, Hagerstown, MD. Tours of the C&O Canal, Martinsburg Roundhouse, etc. Paper proposals requested. See article in this issue. Info: Paula S. Reed, paula@paulasreed.com; (301) 739-2070.

Oct. 17-21: Society for the History of Technology (SHOT) Annual Meeting, Washington, DC. Info: www.shot.jhu.edu.

Oct. 18-20: Labor and Freedom in Global Perspective: 29th Annual North American Labor History Conference, Wayne State Univ., Detroit, MI. Info: Janine Lanza, Coordinator; (313) 577-2525; jmlanza@wayne.edu.

2008

May 29-June 1: SIA 37TH ANNUAL CONFERENCE, SAN JOSE, CA. Info: www.sia-web.org

Wanted: SIA Events Coordinator

The SIA has an opening for the part-time position of Events Coordinator. The successful candidate will report to the Executive Secretary and will have a strong role in the planning and execution of annual conferences, fall tours, and study tours. Current SIA membership is required, as well as experience with SIA events. Relevant

event planning experience is also important. Please submit your application no later than June 1, 2007 to Nanci Batchelor, Chair, Events Coordinator Search Committee, c/o Withum, Smith & Brown, 5 Vaughn Dr., Princeton, NJ 08540; (609) 520-1188; nkbatch@msn.com. ■

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