

# SOCIETY FOR INDUSTRIAL ARCHEOLOGY

## NEWSLETTER

Volume 35

Winter 2006

Number 1

### NEW EXHIBITS AT THE ALABAMA IRON & STEEL MUSEUM

**T**he Alabama Iron & Steel Museum at Tannehill Ironworks Historical State Park took the wraps off a major makeover of its historic iron-making exhibits at a grand opening on Nov. 15. The museum is the centerpiece of the park along with the restored three-furnace ironworks. Tannehill, which dates to 1830, is the birthplace of the Birmingham Iron & Steel District (tour site—1999 SIA Fall Tour, Birmingham). It is listed in the National Register and is an American Society for Metals International Landmark.

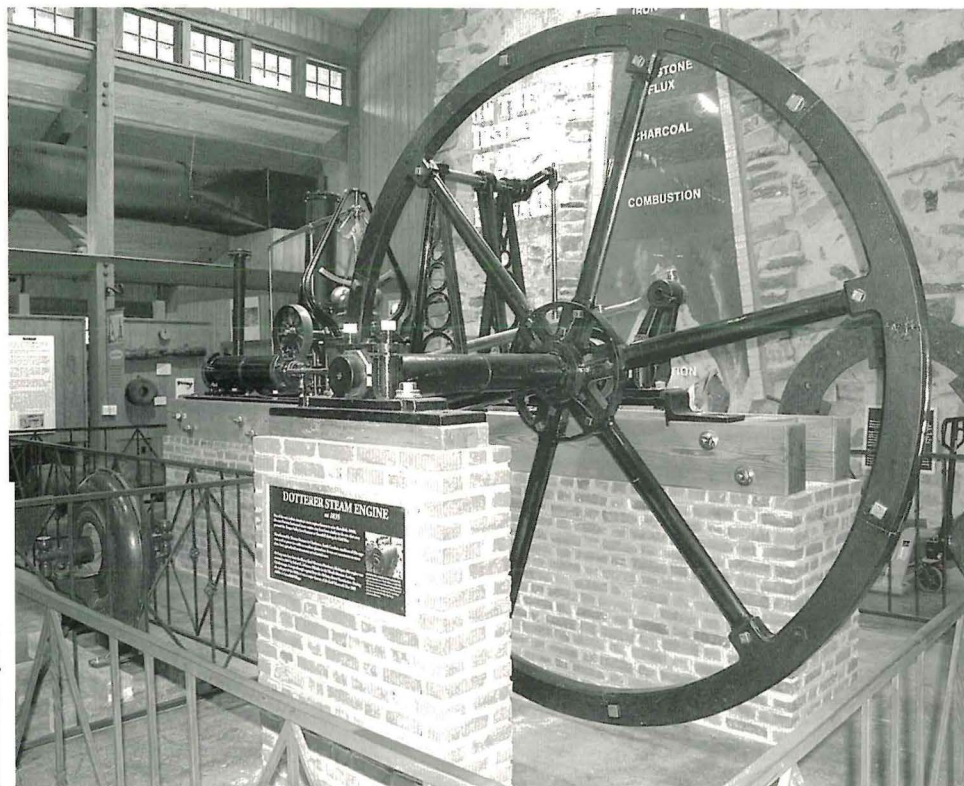
The new exhibits, says State Labor Commissioner Jim Bennett [SIA], will transform the museum, built in 1981, into a southeastern regional interpretive center on iron

manufacture in the 19th century. Work on the project, which began last year, represents an investment of over \$400,000 raised in a capital campaign.

Added displays include one of the oldest steam engines in America, an 1835 Dotterer engine once used on a rice plantation near Charleston, SC, and on loan from the Henry Ford Museum. The huge engine is similar in size to the one that drove the blast engines at Tannehill during the Civil War.

Other new exhibits include a belt-drive machine shop, restored to an 1860s appearance, featuring a cannon lathe, a forge hammer from one of the state's early bloomeries, an 1850s spike machine used at the famed Tredegar Iron Works in Richmond, and a rare collection of artillery shells manu-

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Jim Bennett, all photos

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*The 1835 Dotterer steam engine is the showpiece of Tannehill's new exhibits.*



**Opening reception at the Iron & Steel Museum of Alabama at Tannehill Ironworks State Park, Nov. 2005.**

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 \$35; couple \$40; full-time student \$20; institutional \$50; contributing \$75; sustaining \$125; 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](mailto:SIA@mtu.edu); Website: [www.sia-web.org](http://www.sia-web.org).

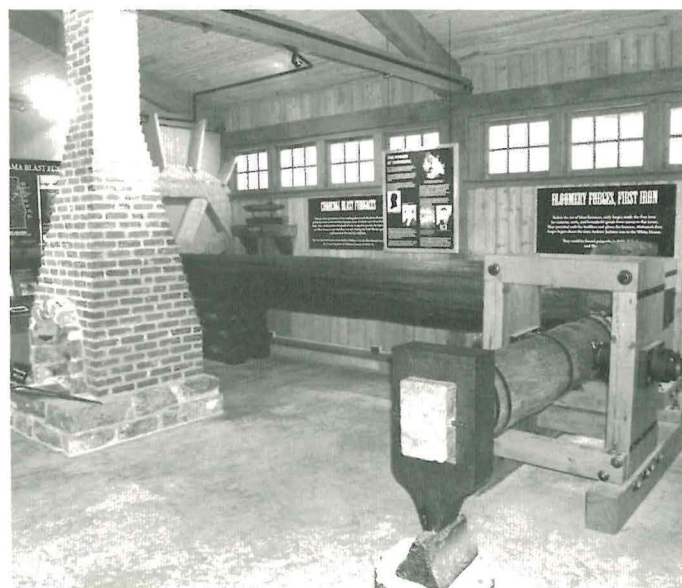
Mailing date for Vol. 35, 1 (Winter 2006), Mar. 2006. ISSN 0160-1067. If you have not received an issue, apply to SIA-HQ (address above) for a replacement copy.

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

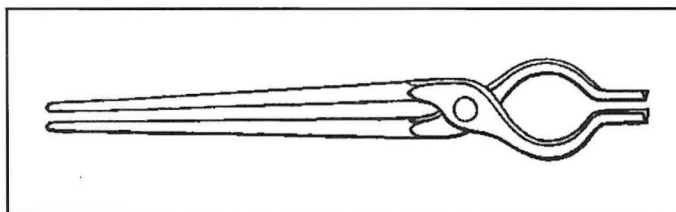
**TO CONTACT THE EDITOR:** Patrick Harshbarger, Editor, *SIA Newsletter*, 305 Rodman Road, Wilmington, DE 19809; (302) 764-7464; e-mail: [phsianews@aol.com](mailto:phsianews@aol.com).

factured at the Selma Arsenal & Gun Foundry from 1862-65. Tannehill was one of the Confederacy's largest ironworks and a major theme at the park is understanding the role industrial production played in the outcome of the war.

"It is a must-see Alabama museum," adds Bennett, who directed the Tannehill makeover. "The story told here is how Alabama became the largest iron producer in the South and Birmingham one of America's premier steel cities." The 12,000-sq.-ft. museum maintains a collection of over 10,000 artifacts, many of Civil War vintage, 2,000 books, photographs and publications, and an array of rare and unique 19th-century tools, machines, and products. The new exhibits include several interactive displays and a 25-seat theater. Other exhibits highlight Birmingham's cast-iron pipe industry, artifacts from Alabama's Civil War iron furnaces, cookware, and geology of the mining region. The museum and park have an annual visitation of more than 400,000. Info: (205) 477-5711; [www.tannehill.org](http://www.tannehill.org). ■



**Forge hammer and hearth on exhibit at Tannehill.**



## CORRECTION

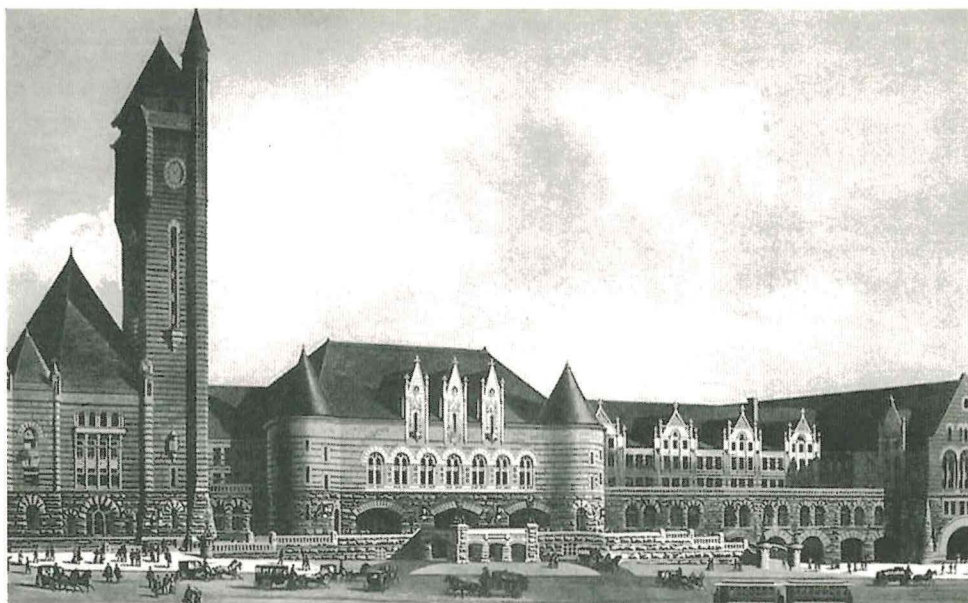
The *National Heritage Areas* article (*SIAN*, Fall 2005) incorrectly located the Ohio & Erie Canal National Heritage Area in Indiana. It is most definitely in northeastern Ohio.

# SIA 2006 Conferences and Tours

## Annual Conference, ST. LOUIS, June 1-4

Union Station, St. Louis, will be one of the venues at the 2006 Annual Conference, June 1-4. Join us as we explore the "Gateway to the West" and its vibrant history of transportation, engineering, and manufacturing. Details and registration materials will be sent to all members in early Spring. Info: [www.sia-web.org](http://www.sia-web.org).

When opened, the station was the largest in the world (as measured by square footage) and served the most trains, according to the Cotton Belt Route RR promotional statement that came with the engraving. Today, the station is a historic preservation success story having been adaptively re-used for commercial space. The Hyatt Union Station will be the conference hotel.



Engraving of Union Station by John A. Lowell Co., Boston, after architect Theo G. Link, 1895.

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## Fall Tour, YOUNGSTOWN, OH, Sept. 28-Oct. 1

*"Everybody breathing dirt, eating dirt—they call it 'pay dirt,' for Youngstown clean would be Youngstown out of work...."*

—Frank Bohn, 1915

Youngstown was just a small village when pockets of iron ore were discovered in the late 18th c. This resulted in the construction of the first blast furnace in the area by Daniel and James Heaton. However, it was not until limestone deposits were also found nearby and canals and railroads arrived during the 1820s to 1840s that the stage was set for Youngstown to emerge as a great iron and steel center. Once dominated by basic steel, the Youngstown economy is diversifying to include automobile assembly, metal fabrication, and small business enterprises, but remnants of iron and steel making still mark the landscape.

With the help of Youngstown State University and SIA's Northern Ohio Chapter, plans are taking shape to explore this heritage during the 2006 Fall Tour, Sept. 28 to Oct. 1. A day-long early bird tour to Erie, PA is in the works, followed by an opening reception at the Youngstown Historical Center of Industry & Labor. McDonald Steel, WCI Steel, Lordstown GM Auto Assembly Plant, and V&M Steel's mini-mill, once part of Youngstown Sheet & Tube's Briar Hill Works, tentatively are on the menu of potential tours. Also on the preliminary itinerary are the

covered bridges of Ashtabula and a visit to Mill Creek Park where a restored 1846 grist mill stands upriver from remains of one of the area's earliest iron furnaces and an early woolen mill.

Plan to get down in the dirt with us in Youngstown.

**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 St. Louis, June 1-4, 2006, should submit a concise letter outlining their demonstrated interest in and commitment to industrial archeology or a related field, and one letter of reference. **Deadline for applications is April 23, 2006.** Info: Patrick Harshbarger, SIA Scholarships, 305 Rodman Road, Wilmington, DE; (302) 764-7464; [phsianews@aol.com](mailto:phsianews@aol.com). Notice of awards will be made by May 1.

For members wishing to make a contribution to the scholarship fund, a check-off is provided with annual dues notices. Your support is kindly appreciated and helps students to participate in the Society and its programs.

# SIA Steers to Detroit

## 2005 Fall Tour Review

**F**ord, Cadillac, Dodge, Chrysler, Packard—the SIA's 2005 Fall Tour, Sept. 28-Oct. 1, brought together more than 150 SIA members to experience the industrial history of Detroit with the spotlight on—what else—the automotive industry. During four days of tours and activities, we saw many auto and auto-parts factories, toured several active plants, soaked in historic architecture, cruised the Detroit and Rouge rivers, and even stood on the very wood floors that witnessed the birth of the Model T.

A running theme throughout the tour was the evolution of the Ford Motor Co. SIA members made pilgrimage to many of the most famous Ford facilities, including the Piquette Avenue Plant, Highland Park Plant, and River Rouge. But the focus of Thursday's early bird tour was on one of Ford's lesser known accomplishments, the village industries. Between the world wars, Henry Ford established small factories in rural Michigan towns. These plants provided specialty parts and supplies to the massive automotive plants in Detroit, and Ford hoped that the jobs they created would stem the tide of rural workers leaving their homes to seek employment in the city. Whether this social-engineering experiment achieved the desired results is debatable, but it left a legacy of old mills converted into small factories that produced everything from batteries to employee badges for Ford. The SIA's bus tour wound its way along the Rouge River to Northville, Waterford, Mead Mill, Phoenix, Wilcox, and Newburgh, exploring the landscape, architecture, and industry shaped by Ford's vision. The Nankin

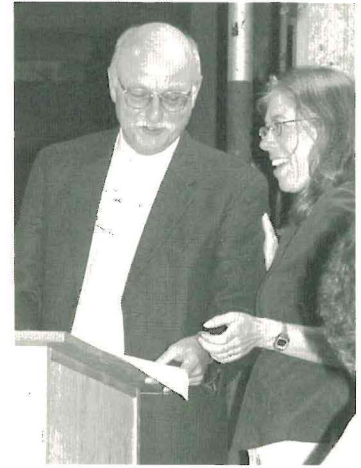
Mills Interpretive Center, located in the first of Ford's village factories, provided an overview of the village industry movement.

Thursday night's opening reception was in the **Ford Piquette Avenue Plant (1904)**. This unassuming three-story brick factory is the birthplace of the Model T. Between 1904 and 1910 Henry Ford and his assistants worked out the breakthrough design and experimented with the moving assembly line that later revolutionized mass-production techniques. The first twelve thousand or so Model Ts

were assembled here before Ford opened the **Highland Park Plant (1909-1920)**, the first automobile plant designed around a moving assembly line process. A dedicated group of volunteers has formed the nonprofit Model T Automotive Heritage Complex, Inc. (T-Plex) to preserve the Piquette Avenue Plant. They've already begun filling the building with an impressive collection of antique cars and exhibits. Charlie Hyde [SIA], one of the principal

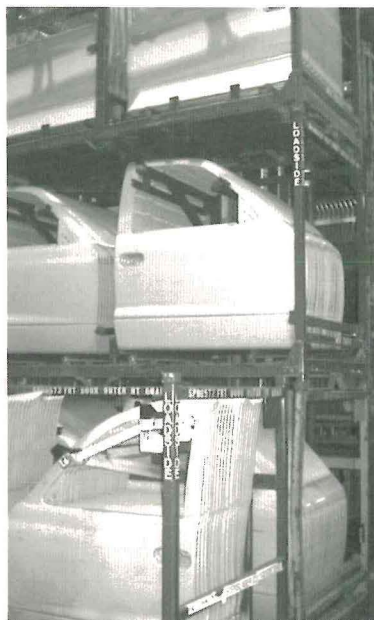
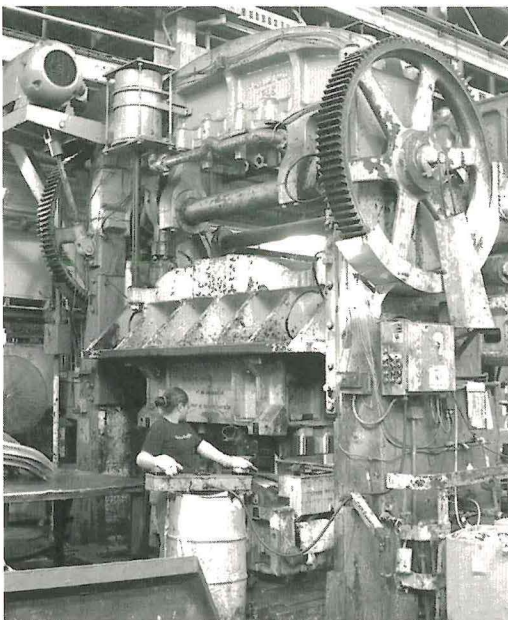
organizers of the fall tour, gave a slide-illustrated presentation, providing an overview of Detroit's industrial history and making a compelling case for the Piquette Avenue Plant's place as one of the world's most significant historical sites. The plant is listed in the National Register and is under consideration for National Historic Landmark status. Richard K. Anderson, Jr. [SIA] led an informal group discussion of his work documenting the Piquette Avenue Plant. He has helped to definitively identify the corner of the building in which Henry Ford drew the plans for the Model T, even establishing through evidence of nail holes and old electric wiring the very spot where the drafting table likely stood.

Friday's tour began with a specially arranged visit to **Ford's River Rouge**. This 2,000-acre site was purchased by Henry Ford in 1917. Although he had barely finished the major buildings at



Susan Appel

**Charles K. Hyde (left) and Mary Habstritt, SIA Events Coordinator, at the T-Plex opening reception.**



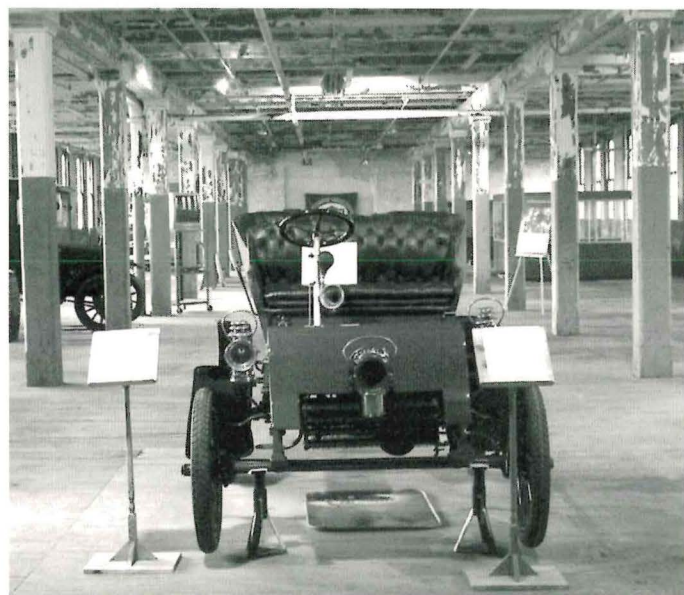
**At New Center Stamping, huge presses stamp out replacement automobile parts, including this three-high rack of door panels.**

Highland Park, Ford wanted a site to realize his vision of a fully integrated industrial complex that would not only assemble automobiles but provide the steel, glass, and rubber to make them. During the 1920s and 1930s, the Rouge grew enormously, becoming the world's largest industrial plant with several dozen monumental buildings designed by architect Albert Kahn (*SIA*N, Summer 2005 and Summer 1999). Today, the Rouge is a shadow of what it was in its heyday, employing only about 8,000 workers as compared to the 120,000 workers who toiled during WWII, and several of the original buildings are gone, but it is nonetheless still impressive.

We took in the view of the River Rouge complex from the observation deck of the new **Rouge Factory Tour** visitor center, operated jointly by the Henry Ford Museum and the Ford Motor Co. Bob Kreipke, the Ford Company Historian, greeted us and gave a brief overview of the complex's history, pointing out such features as the steelworks, including blast furnaces, which remains in operation as the independent **Rouge Steel Co.**, and the new **Dearborn Truck Plant** with its "green" roof planted with vegetation that helps to filter water and absorb pollutants. The visitor center has two theaters, one featuring a film presentation on the history of Ford, and the other a 360-degree video presentation that follows the manufacture of a car from raw materials to finished product. The latter is highly stimulating, with laser lights, a floor that shakes and rumbles, and even simulated smells of factory processes injected into the air. This was followed by a self-guided tour of the F150 truck assembly plant from a glass-enclosed catwalk.

The highly controlled and glitzy presentation at the Rouge stood out in contrast to our next stop **New Center Stamping**. Located in the former Fisher Body Plant No. 37

(continued on page 6)



*Interior of the Ford Piquette Avenue Plant (1904). Preservationists have saved the building and are in the process of developing exhibits. It already houses an impressive collection of antique autos.*

## NOMINATIONS COMMITTEE ANNOUNCES 2006 SLATE

The SIA Nominations Committee is pleased to present the following slate of candidates for the 2006 election:

**President** Robert C. Stewart  
(2-year term)  
You will vote for one

**Vice-President** James Bouchard  
(2-year term) David Starbuck  
You will vote for one

**Secretary** Richard K. Anderson, Jr.  
(3-year term)  
You will vote for one

**Treasurer** Nanci K. Batchelor  
(3-year term)  
You will vote for one

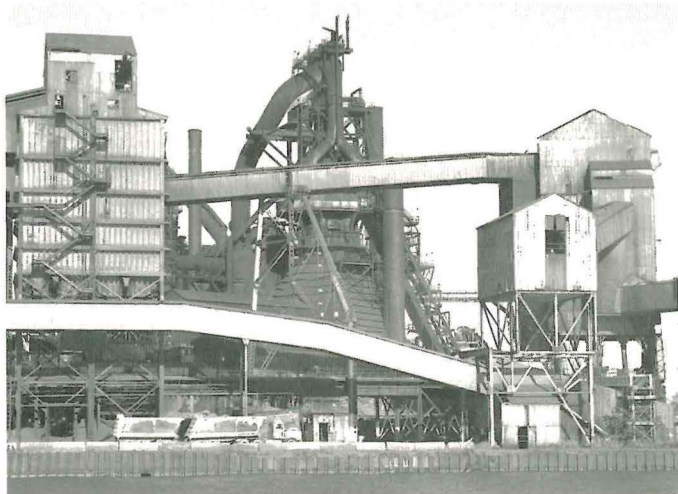
**Director** Jeffrey Darbee  
(3-year term) Mark Finlay  
You will vote for two Dennis Furbush  
William Lannin

**Nominations Committee** Ed Grusheski  
(3-year term) Todd Croteau  
You will vote for one

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 2006 calendar year) and delivered to the Nominations Committee chair at the address below no later than **April 23, 2006**. 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 2006 calendar year in order to vote.

The 2006 Nominations Committee is Martha Mayer (chair), Jet Lowe, Cydney Milstine and Vance Packard (ex officio). Please direct all nominations and other correspondence to: SIA Nominations Committee, c/o Martha Mayer, 133 Griswold Rd., Wethersfield, CT 06109; (860) 257-1705; [m4mayer@att.net](mailto:m4mayer@att.net).

Patrick Harshbarger



*The active blast furnaces at Zug Island (Great Lakes Steel), one of the many industrial sites viewed during our cruise of the Detroit and Rouge rivers.*

(1925), we were able to freely wander the shop floor, talking with managers and employees about the custom stamping and welding operations that make small runs of automobile replacement parts such as fenders, hoods, bumpers, doors, grills, and floor pans. The plant has over 50 presses, 20 of which have beds of 120-in. or larger. Owner Gregory Smith met our group in the lunchroom and gave some background on the parts business and how he had bought the plant from General Motors in 1992.

At New Center Stamping, teams of workers place the sheet metal in the press and stamp out each part one by one, similar to the way it's been done since the early days of the automobile industry. At **Thyssenkrupp Budd's** stamping plant on Detroit's East Side, we saw the same stamping process highly automated, with robots turning out new car parts at astonishing speeds. The stamping plant is located in the former Liberty Motor Car Co. plant (1916-1923), which Edward G. Budd purchased in 1925 for stamping out steel car bodies. The process has been significantly updated since the early days but some of the original architecture remains, including the office facade that is a ½-scale replica of Philadelphia's Independence Hall.

The steamship **Ste. Claire**, docked on the Detroit River, offered us a respite from automobiles and some humor, since its interior was decked out as a "haunted" ship, complete with fake skeletons, cobwebs, and blood for Halloween. The owner, John Belko, met our group and explained that admission fees for the haunted boat tour are helping to pay for the ship's restoration. The 190-ft.-long *Ste. Claire* was built in 1910 by the Toledo Steamship Co. and has a triple-expansion steam engine. It served out its career from 1910 to 1991 ferrying passengers to the Bob-Lo Island amusement park located in the Detroit River well south of the city.

Water transport has been an important factor in Detroit's industrial history. Iron ore and other raw materials still make their way to Detroit by freighter, and the city was for many years an important center of Great Lakes shipbuilding. Henry Ford even learned the machinist's trade at the Detroit Dry Dock Engine Works. On Saturday, SIA mem-

Perry Green



*SIA members study the Diego Rivera murals at the Detroit Institute of Arts.*



# 2006 GENERAL TOOLS AWARD

## Call for Nominations

**T**he General Tools Award Committee invites SIA members to submit nominations for the **2006 Society for Industrial Archeology General Tools Award for Distinguished Service to Industrial Archeology**. The

award, presented at the SIA annual business meeting, recognizes individuals who have given sustained, distinguished service to the cause of industrial archeology.

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 exam-

ple) may be appended to the nomination. Nominations must also include the name, address, and telephone number(s) of the nominator. Nominations may be made by any SIA member in good standing.

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, and a \$1,000 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).

Nominations, *which must be received on or before April 14, 2006*, should be submitted to: Professor Thomas E. Leary, Dept. of History, Youngstown State Univ., One University Plaza, Youngstown, OH 44555; (330) 941-1611; [teleary@ysu.edu](mailto:teleary@ysu.edu). ■

bers took to the water on a narrated cruise of the Detroit River. We passed under the **Ambassador Bridge** (1929), which with a main span of 1,850-ft. was for a short time the longest suspension bridge in the world. We saw ore docks, a refinery, and several lake freighters before turning up the Rouge River and passing under a variety of drawbridges, then reaching the turning basin at Ford's River Rouge for a spectacular view of the Rouge's blast furnaces.

Saturday afternoon was spent on a bus tour of Detroit's East Side led by Charlie Hyde, Bob Casey, and Bode Morin [all SIA]. Among the highlights were the sprawling **Packard Motor Car Company Complex** (1905-1940s), an early and significant example of the work of industrial architect Albert Kahn; the **Ford Highland Park Plant** (1909-1920) where Ford introduced the revolutionary \$5-a-day pay scale in 1914; and the **Fisher Building**, built in 1927 by the seven Fisher brothers with their fortunes earned at the Fisher Body Company. The building features an opulent interior with vaulted arcades, Italian marble, and solid brass trim. The afternoon was capped by a visit to the Detroit Institute of Arts and the **Detroit Industry Frescoes by Diego Rivera**. Several knowledgeable guides were on hand to tell us about the history of the murals, the techniques used to make them, and the symbolic meaning of the images.

The **Dossin Great Lakes Museum** was host for the Saturday evening banquet. The museum, part of the Detroit Historical Museums, is on Belle Isle Park, a Frederick Law Olmsted-designed landscape in the Detroit River south of the city. SIA members sipped and snacked while taking in the museum's collection of ship models and displays on

maritime history of the region. Several of us enjoyed playing "ship's captain" in an actual freighter pilot house that was salvaged and installed at the museum, a popular attraction for old and young alike, and then enjoyed a sumptuous meal while overlooking the shipping channel as several freighters slipped by in the twilight.

Sunday morning offered tour goers a choice of bus or

*(continued on page 8)*



John Reap

*Automotive themes and details abound in Detroit's architecture. Bas-relief on facade of Autocar Motor Truck Company dealership (1931).*

walking tours. The group that chose the bus joined guide Charlie Hyde for a tour of **Milwaukee Junction**. Taking its name from the 1858 intersection of the Detroit & Milwaukee and Chicago, Detroit & Canada Grand Junction railroads, this area to the north of I-94 in downtown Detroit offered superb rail connections for industrial development and was the cradle of the American automobile industry, as well as a center for other types of manufacturing including cast-iron stoves, a famous Detroit product before the automobile. Not only is the junction the location of Ford's Piquette Avenue Plant, it is a textbook of early 20th-century industrial architecture, including complexes of the J. W. Murray Body Co., Anderson Carriage Company, and Fisher Body. Unfortunately, the Studebaker complex was recently lost to fire (*SIAN*, Summer 2005).

About 25 members joined the architectural walking tour of downtown Detroit, led by guides from Preservation Wayne, the local historic preservation advocacy group. We stopped by several of the city's landmark buildings, including the GM Global Headquarters, the Guardian Building with its wonderful Art Deco interior, and Greektown, a neighborhood that has stubbornly maintained its ethnic identity through difficult times in the inner city.

The SIA's thanks go out to all of the sites and volunteers who worked to make this year's fall tour a resounding success. Special thanks goes to the organizing committee led by Bob Casey, Charlie Hyde, and Bode Morin. Thanks also to Dennis Zembala, Director of Detroit Historical Museums,



Patrick Harshbarger

*The steamship Ste. Claire (1910). Fall tour participants learned about its restoration and the "haunted Halloween boat" fundraising scheme.*

Jerry Mitchell of the T-Plex, Marc Greuther of the Henry Ford Museum, and SIA Events Coordinator Mary Habstritt, who helped to make it all happen.

Patrick Harshbarger

## SITES & STRUCTURES

The **Zip Feed Mill** in Sioux Falls, SD, made national headlines in early December when it refused (at least briefly) to yield to demolition. The 210-ft.-tall, reinforced-concrete mill opened for business in 1956 and was operated by Ridley, Inc. When new, it was considered the most technologically advanced mill in the world, but over time it became popularly known as the tallest building in the state. The demolition was scheduled to topple the building at 12:55 pm on Dec. 3, in what was supposed to be a spectacle observed by thousands. Instead, after a loud blast, the building leaned and then failed to collapse. Demolition experts chalked up their failure to the nature of "old concrete," which in this case instead of allowing them to take a hunk out of one side, thus cutting a wedge out so the building would topple, simply crumbled on all sides of the foundation, leaving the top of the building to fall and become stuck like a cork in a bottle. The mill will be now be taken down using a wrecking ball.

The **Silver Spade**, a massive stripping shovel owned by Consolidated Coal, is retiring after a 40-year career in Harrison County, OH. The age of the shovel has made it less than cost-effective to continue its use, mainly due to high maintenance and the lack of replacement parts. The

Bucyrus-Erie shovel, with its 200-ft. boom and 105-cubic-yd. shovel is one of the largest ever built, and one of only four of its type surviving in the U.S. The Harrison Coal & Reclamation Historical Park (HCRHP), based in New Athens, is hoping to keep the shovel from the scrap heap by adding it as the centerpiece of its collection of historic surface-mining equipment. Consolidated Coal officials have yet to decide the shovel's fate, but are aware of the community's interest in seeing it preserved. Info or to make a contribution: HCRHP, Box 403, Cadiz, OH 43907; [www.hcrhp.org](http://www.hcrhp.org).

Efforts to preserve the **High Line** (*SIAN*, Spring-Summer 2004), the 20-block-long viaduct that runs along the western edge of Manhattan, reached a milestone in November when the line was officially "railbanked," clearing the way for construction and rehabilitation to begin. In order for the High Line to be railbanked, the City of NY acquired the title from CSX Transportation and signed a trail-use agreement, permitting the structure to be used by the public as a recreational amenity. More than \$20 million in city, state, and federal funds have already been brought to the project that will turn the High Line into a pedestrian walkway and linear park. Info: [www.thehighline.org](http://www.thehighline.org). ■

# Saving "Lost Bridge"

**B**efore 1915, there was only a ford across the Eel River one mile east of Denver, IN. That year, the Miami County Commissioners decided to build a bridge and hired the Rochester (IN) Bridge Co. to build the Pratt through truss. The best location for the bridge was considerably downstream from the ford. The only problem was that there was no money to extend the road to the bridge site. The bridge was built, and for several years it sat "lost" in the wilderness of Miami County. George Eikenberry, the farmer on the south end of the bridge, offered to build the road for a tax abatement. The commissioners accepted his offer and for a while the bridge was known as the Eikenberry Bridge. But "Lost Bridge" was the more popular moniker, and it stuck.

In 1987, there still were ten metal-truss bridges in Miami County. The county commissioners were replacing them as fast as money would allow. No one objected to the "new and improved" bridges until, in 2003, the public realized that there were only three of the old metal-truss bridges left! When the commissioners proposed replacing Lost Bridge, some of the local history buffs and preservationists spoke against the project. A half page ad was put in the local paper with a color photo captioned, "Save Lost Bridge and Save Taxpayers One Million Dollars." A brief paragraph explained that the cost of rehabilitation was estimated to be \$350,000 versus \$1.2 million to replace the bridge. With 80/20 federal cost sharing, the county's cost of rehab would be only \$70,000. At the bottom of the ad was a part to be torn off and sent back to Friends of Lost Bridge, a group that had been formed to save the bridge. The friends group received more than 250 responses, many with letters attached commenting about personal remembrances of picnics, artistic inspirations, fishing, swimming, and generally



enjoying the environment of that old bridge and its setting. One teacher commented that two of her sons are pursuing engineering careers because of the inspiration of picnics by the old bridge. These comments were given in bulk to the commissioners, and used along with a letter from the local fire department, comments from neighbors, several letters to the editor of the local paper, low road use statistics, and the lack of real need, to make a case for rehabilitation with the state and county.

Several special interest groups were pressing for a new bridge. The Farm Bureau Co-Op sent a representative to the hearing advocating a "farm-to-market" concept involving transporting grain and machinery across the river. Our rebuttal was that there were few farmers who owned land on both sides of the river, and that already there were two bridges one mile in either direction from Lost Bridge capable of carrying the widest and heaviest machinery and loads. Furthermore, there was no market even close to the bridge. Another proponent of a new bridge was the grandson of the farmer who had built the road to Lost Bridge. He felt the old bridge was "a bucket of rust" and needed to be replaced. The plan for the new bridge called for almost one mile of new road and, of course, the old borrow pit was still there on his farm adjacent to the proposed new construction. This obvious conflict of interest wasn't known until local preservationists brought it to the state highway department's attention. When the State Historic Preservation Office (SHPO) refused to approve the demolition of the bridge, which is eligible for the National Register, the county commissioners took the case to the Federal Highway Administration (FHWA) for review.

Meanwhile, preservationists expanded their scope to the other two remaining bridges as "Friends of Miami County's Iron Bridges." A bridge clean-up day was planned on the third Saturdays of March, April, and May 2002. The group placed trash barrels at each bridge reading "Friends of Lost Bridge



*Lost Bridge in Miami County, IN, built in 1915, has served as the inspiration for a county-wide "save our bridges" movement.*

*(continued on page 10)*

## Lost Bridge (continued from page 9)

Don't Litter." Together with the county historical society, the friends group instituted the Miami County Iron Bridge Festival and Float-Fest on the third Saturday in June. The festival features a canoe float under the bridges and a hog roast with bluegrass music on the grounds of the historic Stockdale Mill, a restored gristmill on the banks of the Eel River just upstream from the first of the three metal-truss bridges. The local YMCA provides a bus for transportation of the canoeists, and volunteers ferry the canoes and gear back to the mill for the food and fun. Driving tour maps are also handed out for those who don't want to float the river, but want to visit each of the three bridges. The mill is also opened for tours, making a very scenic and historic festival. The festival has been held for three years now and has been steadily growing.

After the Lost Bridge replacement project stalled in federal review, two new commissioners were elected, and the county commission decided they didn't have enough money to build the new bridge anyway and announced they had decided to rehabilitate Lost Bridge. The friends group, pleasantly surprised, offered to write letters of support for grants. The county intends to continue the annual Iron



*Canoes pulled up opposite Stockdale Mill. Miami County's Iron Bridge Festival features a canoe float under the bridges followed by a hog roast and music festival at the mill.*

Bridge Festival and publish more tour brochures, making them available at local restaurants and motels. The iron bridges of Miami County have become an asset to tourism and help to improve our local economy, while continuing to inspire and serve our citizens.

*Don Musselman*

## American Museum of Papermaking Opens New Exhibits

The Robert C. Williams American Museum of Papermaking, housed in the Institute of Paper Science & Technology at the Georgia Institute of Technology in Atlanta, opened new exhibits in Sept. 2005, doubling the area of its publicly displayed collection.

The centerpiece is a new exhibit, *From Hand to Machine: The Evolution of Papermaking*. It follows the development of papermaking technology from practically every corner of the globe, starting in the 14th century with hand processes and continuing through modern times and the current mass-production techniques that make paper one of the world's most common manufactured commodities.

One of the exhibit's features is a Fourdrinier paper-making machine for production of filter paper for gas masks, complete with steam-heated drying drums. There is also a highly detailed, but non-working, model of a Robert [ro-BARE] machine, the Fourdrinier's predecessor. Stamping mills and Hollander fiber macerators are on display, as well as an array of machines for drying newly made paper. The museum also presents an assortment of papers, as well as paper-based artwork.

Many exhibits contain artifacts from the Dard Hunter Collection, assembled by the well-known papermaker and historian during the first half of the 20th century. Hunter was the author of *Papermaking, The History and Technique of an Ancient Craft* (1943, reprinted 1978 by Dover Books). Many of the items pictured and described in the book are in the collection. A special exhibit section is given over to the topic of "Dard Hunter and the Revival of the Handmade Book," displaying all of Hunter's handmade books in one location for the first time. Many of the books are printed on the kind of paper that is the subject of the book. Also displayed are Hunter's remarkable collection of watermarks and watermark moulds.

The museum opened in its current location in 1993, having moved from Appleton, WI, where it had been located since 1946. The collection was founded at MIT in 1936.

The museum is located on Atlanta's 10th St., on the Georgia Tech campus, and is open M-F, 9-5. Admission is free. Info: [www.ipst.gatech.edu/amp](http://www.ipst.gatech.edu/amp). ■



# SOCIETY FOR INDUSTRIAL ARCHEOLOGY NEWSLETTER

## PUBLICATIONS OF INTEREST

Vol. 35, No. 1

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COMPILED BY

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

### GENERAL INTEREST

- ♦ Tim Barringer. **Men at Work: Art and Labour in Victorian Britain.** Paul Mellon Centre for Studies in British Art by Yale University Press, 2005. Chapters include "Blacksmith and Artist" and "Art and Industry." Heavily illustrated.
- ♦ James W. Cortada. **The Digital Hand: How Computers Changed the Work of American Manufacturing, Transportation, and Retail Industries.** Oxford, 2003. 512 pp., illus. \$24.95. Beginning in 1950, when digital technologies began to appear, examines the ways different industries computerized, as well as the ways their innovative applications influenced other industries and the economy.
- ♦ Bryan Hayes. **Infrastructure: A Field Guide to the Industrial Landscape.** Norton, 2005. 536 pp., illus. \$49.95. Sets out to explore all of the major "ecosystems" of the modern industrial world, revealing what the structures are and why they're there. Chapters cover agriculture, natural resources, energy, communication, transportation, manufacturing, and waste. Author is a science writer and this book is illustrated with his own photos taken between 1997 and 2004. Written as a field guide to explain to passersby what they are seeing when they view such industrial landmarks as a grain elevator, a power plant, or a strip mine, and goes on to explain how they work.
- ♦ **Industrial Patrimony (Patrimoine de l'industrie)** is TICCII's scholarly journal. Vol. 13 (2005) includes six articles in English, five in French, and one in Spanish. The first half is devoted to a review of the state of the industrial heritage in the Americas with articles on industrial heritage policy in Argentina, Chile, Cuba, and Mexico; an update on Canada's Lachine Canal; and Eric DeLony's [SIA] account of HAER's beginnings. In the second half is a discussion of the methodology of preserving industrial landscapes and a program to preserve steelworks in Sesto San Giovanni, Italy. Info: [www.mnactec.com/ticcih](http://www.mnactec.com/ticcih).
- ♦ Susan G. Larkin. **American Impressionism: The Beauty of Work.** Bruce Museum of Arts and Science (Greenwich, CT), 2005. Art history thematically organized around topics of factory, mill, quarry, city, countryside, waterfront, and home. Cover art features Julien Alden Weir's views of the Willimantic Thread mills (CT). Beautiful.
- ♦ Jeff Byles [SIA]. **Rubble: Unearthing the History of Demolition.** Harmony Books, 2005. 346 pp., illus. \$24. The social, economic, scientific, and personal contexts of how the built world gets unbuilt, including the technology of artfully bringing down a building with explosives and the prosaic operation of the wrecking ball. From the razing of Seattle's Kingdome in 2000 to London's Great Fire of 1666 where wreckers blew apart houses with barrels of gunpowder to stop the blaze, what happens when buildings fall, and the "destructive creativity" of tearing down a building only to build again, usually larger and grander.
- ♦ Jameson W. Doig. **Empire on the Hudson: Entrepreneurial Vision and Political Power at the Port of New York Authority.** Columbia Univ. Pr., 2001. 582 pp. \$68.50 hardbound.; \$24.50 paper. How the Port Authority of New York and New Jersey built bridges, tunnels, a bus terminal, and the World Trade Center—and who were its leaders and builders.
- ♦ Keith Falconer. **Ditherington Flax Mill: A Fresh Life.** TICCII Bulletin 30 (Summer 2005), p. 3. Marshall, Benyon & Bage's Ditherington Flax Mill, constructed in 1796-97 on the outskirts of Shrewsbury, England, is widely regarded as the world's first iron-frame, fire-proof mill. Describes efforts to adaptively re-use the building.
- ♦ Benjamin Forgey. **After 25 Years, Building Museum Is a Pillar of the Community.** *Washington Post* (Oct. 29, 2005), p. C1. The National Building Museum celebrates its 25th anniversary as a national center to commemorate and encourage the building arts. Museum's success can be quantified by the 167 exhibits held since 1985, when the museum officially opened to the public, but challenges to funding and staffing remain.
- ♦ Dolores Hayden. **A Field Guide to Sprawl.** Norton, 2006. 144 pp., illus. \$19.95 paper. Aerial photos provide the "visual" vocabulary to characterize land-use patterns. Explains terms, like duck, ruburb, tower farm, big box, and pig-in-a-python, used by planners to critique uncontrolled growth.
- ♦ Patrick O. Healy. **The End of the Tunnel? Where Rochester Sees a Problem, Preservationists See Potential.** *NY Times* (Aug. 11, 2005). Rochester's 1.7-mile-long subway tunnel, built in 1927 and abandoned since 1956, lies on the original bed of the Erie Canal. Some want to fill the tunnel to put an end to a liability, others want to turn it into a museum, light-rail line, or even return it to use as a canal.

### BUILDINGS & STRUCTURES

- ♦ Kate Ascher. **The Works: Anatomy of a City.** Penguin, 2005. One of the great challenges of the Koch administration was to address the aging infrastructure of NYC in the aftermath of the fiscal crisis. This account brings the vitally important story of the city's hidden systems up to date, telling the tale of the

- ◆ Barbara Powers. **Ohio's Pride: The Art and Architecture of the Ohio State Office Building.** *Timeline* (Jan.-Mar. 2006), pp. 2-19. Illustrated history of handsome state office building, built from 1930 to 1933, featuring sculptures and murals depicting Ohio industry and commerce.

## BRIDGES

- ◆ Jon Axline. **Conveniences Sorely Needed: Montana's Historic Highway Bridges, 1860-1956.** Montana Historical Society (1-800-243-9900), 2005. 174 pp., illus., maps. \$22 paper, \$39.95 cloth. Documents the history of hundreds of bridges that have been replaced or are scheduled for renovation, and explores the bridges as symbols of the cooperative spirit that led to the economic and social stability of communities in Montana for over a century. Author is MT DOT historian. Based in part on the 1980-81 MT DOT historic bridge inventory prepared by Fred Quivik and Gray Fitzsimmons [both SIA].
- ◆ Robert Gordon [SIA] and Robert Knopf. **Evaluation of Wrought Iron for Continued Service in Historic Bridges.** *Journal of Materials in Civil Engineering* (July-Aug. 2005), pp. 393-99. Reviews various methods for testing wrought-iron bridge members and concludes that those from different historic sources tend to vary little in strength but greatly in ductility. The suitability of wrought iron to serve in bridges depends on a balance between strength and toughness. Very strong iron lacks toughness and may fail by brittle fracture. Iron with good toughness will deform by plastic flow before ultimately failing by ductile rupture. Metallurgical analysis shows that more than 0.3% phosphorus in solid solution embrittles wrought iron. The level of phosphorus and distribution of slag fiber can be detected by optical-microscope techniques without having to resort to destructive mechanical testing of samples.
- ◆ David Guise [SIA]. **The Hall (Triple Intersecting Arch Braced All Timber Truss) Mystery.** CBT (Fall 2005), pp. 3-6. Obscure 19th-c. bridge builder S. W. Hall of Philadelphia and bridges in Stonerstown, PA, and Hallowell, ME. Stonerstown bridge history was reported in *SIAN* (Summer 2003).
- ◆ Craig Holstine and Richard Hobbs. **Historic Highway Bridges of the Evergreen State.** WA State Univ. Pr. ([www.wsupress.wsu.edu](http://www.wsupress.wsu.edu)), 2005. Photos, maps. \$24.95. Prepared in cooperation with the WA DOT as an outcome of the statewide historic highway bridge inventory. Covers more than 150 years of bridge-building history and more than 100 photos of the state's bridges past and present, obscure and famous.
- ◆ Lichtenstein Consulting Engineers. **Third Ohio Historic Bridge Inventory, for Bridges Constructed 1951-60.** Ohio Dept. of Transportation, Office of Environmental Services ([www.dot.state.oh.us/oes/hist\\_bridges.htm](http://www.dot.state.oh.us/oes/hist_bridges.htm)), 2004. Purpose of the project was to update Ohio's ongoing historic bridge inventory by identifying bridges that meet the National Register criteria. Report features a context on bridge-building technologies used in Ohio during the 1950s, and a transportation context addressing the role of federal and state policy in advancing road and bridge construction in the post-WWII era. Of particular interest and focus is the development of Ohio's comprehensive interstate highway system, including the role of standardized bridge types and designs, how Ohio's interstate highways originated, how it was designed and built over four decades beginning in the 1950s, and how it has continued to evolve and change to the present day. The complete report is available from the ODOT Website in a pdf format. Also available for download are the *Second Ohio Historic Bridge Inventory* (1990), which covers bridges built between 1941 and 1950, and *The Concrete Arch Supplement to the Ohio Historic Bridge Inventory* (1994). Includes contributions by Tom Barrett, Patrick Harshbarger, Mary McCahon, Bruce Seely, and David Simmons [all SIA].
- ◆ Robert McCullough [SIA]. **Crossings: A History of Vermont's Bridges.** Vermont Historical Society and the Vermont Agency of Transportation, 2005. 380 pp., 24.95. Avail: VHS, [www.vermonthistory.org](http://www.vermonthistory.org); 802-828-2291. Beautifully illustrated with hundreds of never-before-published historic photographs culled from the collection of the state highway agency. Explores the history of various bridge types used in Vermont, and much of the northeastern U.S., since the early 19th century. Chapters on the major bridge types and materials—timber, stone, metal truss, steel arch, suspension, reinforced-concrete arch, reinforced-concrete beam and girder, steel beam and girder, movable, and float. Perhaps the most compelling contribution to the literature of historic bridges is an analysis of their role in Vermont's landscape and how artists, photographers, and other observers frequently have used bridges in their creative work as an expression of aesthetics and artistic sensitivity. Also the successes and challenges of Vermont's historic bridge preservation program, of which the author has played a major role in shaping and implementing.
- ◆ **Parke County, Indiana: Early Covered Bridge History.** CBT (Fall 2005), pp. 7-13. Reprints and illustrates an historical account of the county's bridges, apparently written in the 1920s. Includes map and photos.
- ◆ Parsons Brinkerhoff and Engineering & Industrial Heritage. **A Context for Common Historic Bridge Types.** National Cooperative Highway Research Program (NCHRP), Project 25-25, Task 15, 2005. Research study presents a synthesis of information on the most common historic bridge types found in the U.S., geared toward assisting transportation agencies to identify, evaluate, and document historic bridges. Addresses problems associated with the lack of a national database for historic bridge studies and the lack of HAER documentation of more recent bridge types. Contributions by Eric DeLony and Robert Jackson [both SIA]. Avail.: [www4.trb.org/trb/crp.nsf/reference/boilerplate/attachments/\\$file/25-25\(15\)\\_FR.pdf](http://www4.trb.org/trb/crp.nsf/reference/boilerplate/attachments/$file/25-25(15)_FR.pdf).

## WATER CONTROL & RECLAMATION

- ◆ Konstantinos Chatzis and Olivier Coutard. **Water and Gas: Early Developments in the Utility Networks of Paris.** *Journal of Urban Technology*, v. 12, 3 (Dec. 2005), pp. 1-17.
- ◆ Steven Greenfield. **A Lake By Mistake.** *I&T* (Spring 2006), pp. 38-49. Southern California's Salton Sea, which came into being in 1905-06 when an irrigation canal failed. Describes a series of ill-fated civil engineering decisions to divert and control the water. It took nearly three decades of levee building to stop the flow from the Colorado River, but since then run-off from irrigation and natural precipitation has kept the lake in existence and created a natural wildlife area inhabited by many species of birds. The lake is slowly dying and becoming excessively saline, similar to the Great Salt Lake.
- ◆ Richard E. Hall. **The Christina Creek Pumping Station for the 1906 Wilmington Improvements, Part 1. The High Line** [Philadelphia Chapter, Pennsylvania RR Technical & Historical Society, [www.prrths.com](http://www.prrths.com)] v. 21, no. 2 (Autumn 2005), pp. 3-20. Covers this seldom-mentioned but important aspect of the comprehensive PRR infrastructure changes in Wilmington, DE. Reproductions of 10 drawings.

- ♦ Jorge D. Tartarini. **For an International Network of Water and Waterworks Museums.** *TICCIH Bulletin* 30 (Summer 2005), p. 1. The author, director of the Museo del Agua in Buenos Aires, calls for the establishment of a network of museums to exchange ideas and research about historic waterworks.

## IRON & STEEL

- ♦ Benjamin Freeman & Frederick G. Hoppe. **Electroplating with Chromium, Copper, & Nickel.** Lindsay Publications (Box 538, Bradley, IL 60901; 815-935-5353; [www.lindsaybks.com](http://www.lindsaybks.com)), 2005. 212 pp., illus. \$14.95. Reprint of 1930 textbook describes plating process and technology. Until the late 1920s plating steel consisted of putting down a layer of copper and over that a layer of nickel. Then auto engineers figured that if a thin layer of chrome was deposited over the nickel, the bright work on a car wouldn't have to be regularly polished.
- ♦ Thomas F. Googerty. **Hand Forging and Wrought-Iron Ornamental Work.** Lindsay Publications (Box 538, Bradley, IL 60901; 815-935-5353; [www.lindsaybks.com](http://www.lindsaybks.com)), 2005. 197 pp., illus. \$10.95. Reprint of 1911 *Arts & Crafts* text describes the basics of forge work and various forms of welding, twisting, and embossing to make drawer pulls, hinges, door plates, iron lamps, and more.
- ♦ Paul N. Hasluck, ed. **Smith's Work with Numerous Engravings and Diagrams.** Lindsay Publications (Box 538, Bradley, IL 60901; 815-935-5353; [www.lindsaybks.com](http://www.lindsaybks.com)), 2005. 160 pp., illus. \$9.95. Reprint of 1899 handbook on the art of the blacksmith. Forges and appliances; handtools; drawing down and upsetting; welding and punching; principles of formation; ending and ring making; miscellaneous examples of forge work: cranks, model work, and die forging; home-made portable forges; and manipulating steel at the forge.
- ♦ James H. Johnston. **The New Palmer River Iron Works.** *SIA New England Chapters Newsletter*, v. 26, 2 (2005), pp. 14-23. History and archeology of Rehoboth, MA bloomery that operated c.1721-1757.
- ♦ John Lovis. **The Blast Furnaces of Sparrows Point: One Hundred Years of Ironmaking on Chesapeake Bay.** National Canal Museum (30 Centre Sq., Easton, PA 18042; 610-559-6617), 2005. 128 pp., photos, maps. \$15.95. Written by a former blast-furnace employee, spans over 100 years, from the initial construction of the furnaces and company town in the 1880s, through the record-setting operations of "L" furnace in the 1990s.
- ♦ Abby Goodnough. **Unappreciated, With Memorials to Match.** *NY Times* (Oct. 7, 2005). Miami preservation group is raising funds to restore a memorial to Henry Flagler, the oil tycoon who built a railroad from St. Augustine to Key West from 1894 to 1912, and who played a significant role in the development of Florida as a summer resort. The 98-ft.-tall obelisk on Monument Island in Biscayne Bay is in need of repair.
- ♦ Frank Kyper. **Steam Tumult and Survivors—In the South Tennessee Smokies.** *NRB*, v. 69, 4 (2004), pp. 18-33. Steam railroads in south TN's Smoky Mts., including the Little River RR, Smoky Mt. RR, and extensive coverage of the development of the steam excursion railroad at the Dollywood amusement park in Pigeon Forge, which operates with a 3-ft.-gauge Baldwin 2-8-2 Mikado-type locomotive.
- ♦ Tim Mulina. **East Broad Top Car Books.** Detailed photographs and drawings document the EBT's narrow-gauge cars including *Steel Box Cars* (2005, 62 pp., \$17.99), *Baggage-Passenger Combine Car* (2003, 50 pp., \$16.99), and *Three-Bay Hoppers* (2003, 58 pp., \$17.99). Avail.: Friends of the EBT Company Store, Attn.: Richard M. Ullery, Box 145, Leetsdale, PA 15056. Include \$2.50 p&h for first book, \$1 per additional book.
- ♦ John R. Waite. **The Blue Ridge Stemwinder: An Illustrated History of the East Tennessee & Western North Carolina Railroad and the Linville River Railway.** Overmountain Press (Box 1261, Johnson City, TN 37605; [www.overmountainpress.com](http://www.overmountainpress.com)), 2003. 387 pp. \$59.95. Detailed and heavily illustrated history of narrow-gauge railroad carrying ore and lumber, ca. 1882-1950. Review: *Timber Transfer*, v. 21, no. 4 (Spring 2005), pp. 22-3.
- ♦ John H. White, Jr. **The Strongest Handshake in the World.** *I&T* (Spring 2006), pp. 51-4. Eli H. Janney, inventor of the Janney safety coupler in 1868, and Lorenzo S. Coffin, who made it his mission to persuade Congress to adopt a national law (Safety Appliance Act of 1893) that mandated the coupler's use to save the lives and limbs of railroad workers.

## WATER TRANSPORT

- ♦ Michael Bernstein [SIA]. **Fame, Failure, and the Disappearance of Hog Island Shipyard.** *Nautical Research Journal*, v. 51, 1 (Spring 2006), pp. 28-37. History of

## RAILROADS

- ♦ Lawrence A. Brough and James H. Graebner. **From Small Town to Downtown: A History of the Jewett Car Company, 1893-1919.** Indiana Univ. Pr., c. 2003. 255 pp., illus. \$49.95. Maker of electric railway cars, distinguished for its finely crafted, arch-windowed wooden cars. Rev.: *NRB*, v. 69, 4 (2004), p. 34.
- ♦ Thomas E. Burg. **White Pine Route: The History of the Washington, Idaho & Montana Railway Company.** Museum of North Idaho, 2003. Avail.: WI&M History Preservation Group, Box 547, Potlatch, ID 83855. 385 pp., photos, maps. \$54.95 ppd. The WI&M was the company railroad of the Potlatch Lumber Co., predecessor of today's Potlatch Corp., the lumber giant. The railway brought logs to the mill at Potlatch, ID, and delivered cut lumber to connections with the Northern Pacific, Great Northern, and Milwaukee Road, plus it was the main artery of commerce for its local area. History as an independent operation (1905-1962), under Milwaukee Road ownership (1962-80), Burlington Northern (1980-96), and currently as part of the Palouse River & Coulee City RR, plus details of its locomotives, cars, structures, and right-of-way.

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*With Thanks.*

Philadelphia's WWI shipyard with 50 contiguous shipways and related facilities constructed in 1917-18. A construction achievement of unprecedented proportions, still the shipyard was plagued by critics and distractions, and not one of the ships was delivered before the war ended. Postwar development transformed Hog Island into what is today the Philadelphia International Airport. Scant evidence of the great shipyard can be seen today.

- ♦ Joan Gilbert. **Gateway to the Coalfields: The Upper Grand Section of the Lehigh Canal.** Canal History & Technology Press (30 Centre Sq., Easton, PA 18042), 2005. 212 pp., illus. \$23.50. The massive dams and deep locks at the upper end of the Lehigh Canal in what is today Lehigh Gorge State Park, PA. The Upper Grand Section opened in 1838 and was considered an engineering marvel, but it was largely destroyed by flood in 1862, not to be rebuilt. Some ruins can still be found along the river.
- ♦ Gerard Koepfel. **Andrew Bartow and the Cement that Made the Erie Canal.** *The New-York Journal of American History* (Spring/Summer 2005), pp. 52-60. Discovery of domestic hydraulic cement, which enabled the completion of the Erie Canal, has been wrongly attributed to Canvass White.
- ♦ Janet D. Larkin. **"Mr. Merritt's Hobby": New York State Influence in the Building of Canada's First Welland Canal.** *New York History*, v. 86,2 (Spring 2005), pp. 169-193. Construction of the First Canadian Welland Canal was planned around the Erie Canal's completion as American finance, labor, engineers, contractors, and equipment would be available to assist public works in Upper Canada, not to mention that the canal's economic and commercial success was projected to depend upon American utilization.
- ♦ John H. White, Jr. **Cincinnati's Ferryboats.** *Timeline* (Jan.-Mar. 2006), pp. 44-57. Illustrated history of ferry operations on the Ohio River during the 19th c.

## AUTOMOBILES & HIGHWAYS

- ♦ LeRoy Barnett. **A Drive Down Memory Lane: The Named State and Federal Highways of Michigan.** Wayne State Univ. Pr., 2004. 288 pp., photos, maps. \$29.95. Investigates the roughly 250 memorial or named highways, rediscovering elements of MI's highway heritage in the process. About half were named after people (mostly politicians), a quarter after military or patriotic themes, and the rest celebrated geographic features, towns, and Native Americans. Rev.: *SCA News*, v. 13,2 (Summer 2005), p. 2.
- ♦ Ric A. Dias and Francis H. Bradford. **No Substitute for Power: Hall-Scott Engines.** *Wheels of Time* (American Truck Historical Society), v. 26, 1 (Jan.-Feb. 2005), pp. 36-49. Hall-Scott originally constructed railroad cars and trailer coaches, produced aircraft engines during WWI, entered the vehicular and marine gasoline engine business in the 1920s, and became a division of American Car & Foundry (ACF). Hudson-built Invader engines were installed in landing craft in WWII. After the war, H-S engines powered ACF-Brill products and offered an alternative to GM's diesel intercity coaches. The 400 series engine was considered cutting-edge power for over-the-road trucks (particularly butane-fueled models). By the mid-1950s, however, the battle was lost to diesel; school buses and fire-service trucks for the West Coast market proved an insufficient base for continued production.
- ♦ Kathleen Franz. **Tinkering: Consumers Reinvent the Automobile.** Univ. of Penn. Pr. (1-800-537-5487), 2005. 232

pp., illus. \$35. Automobile owners became tinkerers as they outfitted their cars for travel and to meet middle-class standards of comfort and economy on the road from 1900 to 1940. Some canny drivers moved beyond outfitting their individual cars to become inventors, patenting and selling accessories.

## TOOLS

- ♦ Dana M. Batory. **Vintage Woodworking Machinery, Vol. 2.** Astragal Press (1-866-543-3045), 2004. 208 pp., illus. \$29. Second volume in series of guides to major woodworking machinery manufacturers in the 19th and 20th centuries. This volume covers Parks Machine, Boice-Crane, Baxter D. Whitney & Son, and Crescent Machine.
- ♦ H. G. Brack. **Registry of Maine Toolmakers.** Astragal Press (1-866-543-3045), 2005. 160 pp., illus. \$16. History and documentation of the toolmakers of Maine's maritime era, 1607-1900. Focus is on the edge toolmakers and planemakers who supplied Maine's ship carpenters and timber harvesters.
- ♦ Dan Brett. **Tales from the Blue Ox: A Hands-On Manual of Traditional Skills from the Blue Ox Millworks Historic Park.** Astragal Press (1-866-543-3045), 2004. 232 pp., illus. \$29.95. Park in Northern California is a living-history museum, sawmill, and custom woodworking shop, specializing in gingerbread decoration for Victorian houses. Tells the story of the Blue Ox, while sharing information about specific crafts and skills kept alive there, including formulas for homemade paints, varnishes, and glues.
- ♦ James F. Hobart. **The Screw Cutting Lathe.** Lindsay Publications (Box 538, Bradley, IL 60901; 815-935-5353; [www.lindsaybks.com](http://www.lindsaybks.com)), 2005. 160 pp., illus. \$10.95. Reprint of 1907 ed. about teaching a blacksmith what he needs to know to purchase a lathe, set it up, adjust it, and operate it. Book was written to help blacksmiths take on automobile repair work.
- ♦ Sandor Nagyszalanczy. **Tools Rare and Ingenious.** Astragal Press (1-866-543-3045), 2004. 216 pp., illus. \$37. Illustrated catalog of rare tools, most in the hands of private collectors. Calipers that mimic dancing ballerinas to a drill that's shaped like a violin.

## ABBREVIATIONS:

|          |                                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------|
| CBT      | = <i>Covered Bridge Topics</i> , published by the National Society for the Preservation of Covered Bridges |
| I&T      | = <i>American Heritage of Invention &amp; Technology</i>                                                   |
| NRB      | = <i>National Railway Bulletin</i> , published by the National Railway Historical Society.                 |
| SCA News | = Society for Commercial Archeology Newsletter                                                             |
| TICCIH   | = The International Committee for the Conservation of the Industrial Heritage                              |
| Timeline | = Magazine of the Ohio Historical Society, 1982<br>Velma Ave., Columbus, OH 43211                          |
| Timber   |                                                                                                            |
| Transfer | = Magazine of the Friends of the East Broad Top RR                                                         |

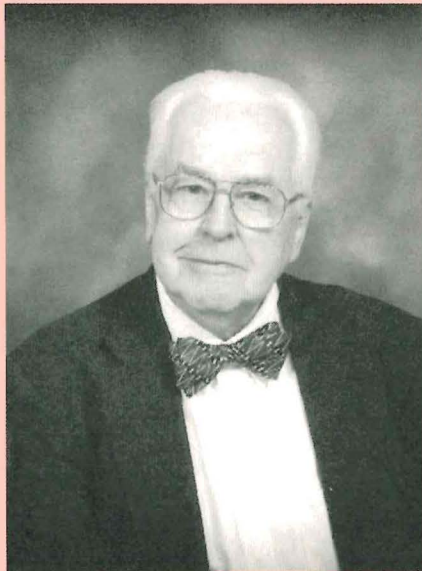
**Publications of Interest** is compiled from books and articles brought to our attention by you, the reader. SIA members are encouraged to send citations of new and recent books and articles, especially those in their own areas of interest and those obscure titles that may not be known to other SIA members. Publications of Interest, c/o SIA Newsletter, 305 Rodman Road, Wilmington, DE 19809; [phsianews@aol.com](mailto:phsianews@aol.com).

# Harry Raymond Valley

## 1912-2005

Harry R. Valley passed away on Oct. 15 after a short period of hospitalization. An SIA member since the mid-1970s, Harry attended most of the annual conferences and fall tours until arthritis limited his mobility in the last decade, and dry macular degeneration impaired his eyesight. He served on the finance and planning committees for the 1986 SIA Annual Conference in Cleveland, memorable for its site tours of the Hulett unloaders at Whiskey Island and the Goodyear Airdock in Akron (SIAN, Winter 1986).

A second-generation American proud of his Estonian heritage, Harry was born in East Cleveland and graduated from East Cleveland Technical High School, where he developed life-long interests in chemistry and photography. During those years, he worked part-time at a soda fountain. Two of the store's patrons were O.P. and M.J. Van Sweringen, the promoters of Shaker Heights, who had entered the railroad business to obtain a right-of-way for a projected rapid transit line and eventually controlled the third-largest rail system east of the Mississippi. When he wasn't otherwise occupied, Harry explored the city, gaining a working knowledge of the streets, neighborhoods, manufacturing companies, and their products. In the Depression years, he attended day courses in accounting at Fenn College (predecessor of Cleveland State University) and worked at the Gulf Oil terminal as night auditor. On the occasion of the burning of the Cuyahoga River in 1944, Harry oversaw the general evacuation and remained on-site to secure the property with a small group of volunteers. (He recalled years later that the flames had fortunately just passed the bulk plant as the vapors in the tanks started to "burp" from the vents). Due to his ready command of products and facilities, Harry was chosen to brief military officers assigned to war plants in the Cleveland district. Subsequently, he was employed by Ernst & Ernst, often traveling to Upper Michigan to audit operations of Cleveland-Cliffs Iron. After becoming credentialed as



*Harry R. Valley, 1912-2005*

a CPA, he formed Valley & Company in 1947, providing general accounting services and estate planning.

Over the years, Harry exploited every opportunity to become familiar with the manufacturing processes and transportation aspects of his commercial clients. Long fascinated by canals, he joined with like-minded enthusiasts in 1961 to found the Canal Society of Ohio, and eleven years later, the American Canal Society. SIA members regarded Harry as a valuable resource for knowledge of industrial activities on the North Coast, knowing "where the bodies were buried," weaving together disparate facts, sharing such information freely, and suggesting avenues for further investigation.

To the uninitiated, posing a question was to receive an unexpected mini-lecture on relevant economics, topography, soil science, and hydrology, as well as history.

Harry was generous with his spare time, leading nature study tours in the Cuyahoga Valley National Park, and assisting in the establishment of the Ohio & Erie Canal Towpath Trail. As a volunteer for the Seamen's Service, his ingenuity was sometimes challenged in resolving problems and emergencies faced by crew members of lake boats and Seaway ships calling on the Port of Cleveland. He also served as a small-craft navigation instructor for the Coast Guard Auxiliary.

Harry was married for thirty-four years to his wife Eleanor, who died in 1967. His two sons, Gaylord and Terry, are also deceased. He is survived by his daughter, Bonnie, five grandchildren, and eleven great-grandchildren. Harry requested that any contributions in his memory be directed to the Lakewood Library Foundation (15425 Detroit Ave., Lakewood, OH 44107) or the Canal Society of Ohio (Box 1132, Perrysburg, OH 43551). Harry, wherever you are, "keep your wick up."

*John Reap*

# 2005 Study Tour—Bologna, Italy

Thirty-five SIA members converged on the historic city of Bologna on Nov. 20 for an intensive week of site visits, museums, and discussions with local industrial heritage professionals.

On a crisp Monday morning, we began with a visit to the **Museo del Patrimonio Industriale (Museum of Industrial Heritage)**. The museum was an excellent partner for the tour and helped arrange visits to a wide variety of sites. Staff member Paola Papini was our guide, translator, and good friend during the visit. The museum is in a former brick factory, originally opened in 1887, that has been creatively adapted to its new function. The racetrack-shaped Hoffmann Kiln is now used as an exhibit space, particularly highlighting the role of the *Istituzione Aldini-Valeriani*, a local technical institute founded in 1842 in an effort to revitalize the local economy, which had been devastated by the collapse of its silk industry in the 18th century. The Hoffmann Kiln was a major innovation in brick making. In it, workers moved the fire around by pouring powdered coal into the chambers from above, while the bricks and terracotta were remained stationary in the kiln's sixteen chambers. Bricks and other ware were produced at the site until 1963, when the supply of clay was exhausted and changes in transportation and the overall economy made it no longer viable.

The museum is on the **Canal Navile**, which was the outflow from an elaborate system of canals and pipes created from the 12th century on to supply water power to Bologna's growing industrial base. Goods could reach Venice in about forty hours by canal versus two weeks by road.

Bologna's industrial heritage has deep roots, dating back to development of a rotary silk spinning machine in the 13th and 14th centuries. Powered by low-volume, overshot waterwheels supplied by the elaborate system of canals and

pipes, these spinning machines required constant attention. Thus, Bologna's industrial revolution, where men must meet the needs of the machines, occurred hundreds of years before the dawn of the steam-driven industrial revolution. The museum has a half-scale working model of one of these machines. The model's construction was made difficult by the secrecy surrounding the technology. The only available documentation was found in materials allegedly stolen, and which had earned the men deemed responsible a sentence of death (*in absentia*) in 1538!

The spinning machines were one part of a complex process for the production and marketing of *voile*, a fine silk cloth, which was a major product for Bologna for several hundred years. Silk moths were grown on the estates of the local nobility. By law, the cocoons were traded only at the *Piazza Galvani*, where the transaction was taxed by the city. Independent contractors, said to be women from Modena, unwound the cocoons, delivering them to be spun into thread. The thread was woven into fabric by other independent contractors, women who owned their own looms. To ensure quality and uniformity, the looms were set up by specialized technicians. The entire process was organized by entrepreneurs who took on the financial and organizational risks, hoping to make a profit. The silk trade was a huge business, with over 300 mills in operation by the 16th century. No other city had the sophisticated network necessary to produce *voile*, so Bologna dominated the trade until the 18th century when the French city of Lyon rose to prominence.

The museum organized a seminar on Monday afternoon, attended by about 150, where experts in various aspects of industrial heritage and preservation from both Italy and the U.S. gave presentations. Although the details of how industrial heritage and preservation proceed in the two



Bob Stewart, SIA Vice President, and Mary Habstritt, SIA Events Coordinator, accept a commemorative medal from Professor Giovanni Sedioli, Director of the Museum of Industrial Heritage in Bologna. The medal recognizes the 170 years that the Bologna Technical Institute has been training the region's engineers and technicians.



Noel Kirshenbaum [SIA] looks at the half-scale model of a silk spinning machine at the Museo del Patrimonio Industriale.

Jay Macauley, all photos

countries differ significantly (most Italian efforts are sponsored by the government, whereas most U.S. efforts are part of private development), there is a common, shared commitment to preserving industrial heritage.

Tuesday was a long day with a tour of **Underground Bologna** in the evening. The River Aposa, a seasonal stream and Bologna's only natural one, has been completely channelized and runs under the center of the old city in a tunnel. The tunnel now lets the visitor see the foundations of the city, and the commentary by our rubber-booted guide wove a fascinating story dating back to Roman times.

Tuesday began with a visit to **IMA**, a leading manufacturer of automated packaging machinery. The Bologna area is sometimes referred to as "Packaging Valley" because it is a world center for the design and manufacture of packaging machines. IMA has three main product lines: tea-bag manufacturing machinery (>60% market share); pharmaceutical packaging machines; and pharmaceutical processing machines such as mixer-granulators and tablet presses. One of the tour's highlights was a C90 blister pack machine, capable of producing 270 completed boxes per minute. There was some surprise at the lack of vertical integration in IMA. Their network of suppliers provides them completed basic machines. "IMA just produces customers," said Daniele Vacchi, our host. That is, IMA adds value through relationships with customers and customizations of basic machines.

Our second plant visit, **SACMI**, featured a very comprehensive process tour and visit to the recently opened **Museo Storico Della Tecnologia SACMI (Museum of the History of SACMI Technology)**. SACMI was founded in 1919 as a "Red" cooperative as an alternative to traditional capitalist industrial development. Though persecuted by fascists, the company survived the dark years prior to WWII. Its flexible organizational structure has over the years allowed it to get into many radically different product lines, e.g. two large areas are ceramics machinery, especially very large tile presses, and machinery to manufacture beverage bottle caps

and other food-packing machinery. Oh, and did I mention the Electronic Nose? Growing out of their food-processing machinery expertise, the Electronic Nose is a sensitive device that can tell the difference between two smells, e.g. it can tell Romanian truffles from Italian ones.

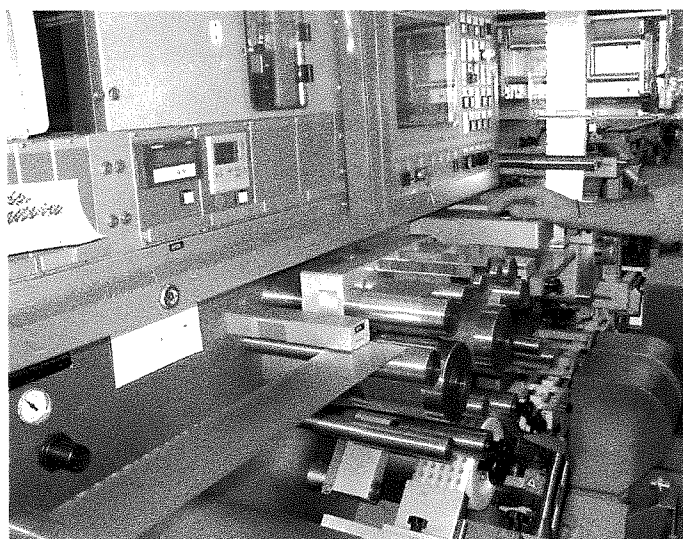
The fine weather we'd enjoyed started to turn on Wednesday, with even a little snow as we journeyed to Longiano to visit **Neri**, a leading vendor of "street furniture."

Neri started as a foundry producing lampposts, benches, and other utilitarian pieces for the urban landscape. Though the actual casting is now outsourced, Neri still creates the patterns in house. The product line includes contemporary products, but of far more interest, there was restoration work and a wide variety of new pieces in historical styles. We were greeted by company founder Dominico Neri, who now devotes his skills in foundry work to creating statues, some of which are inspired by the *Commedia dell'Arante*. We were given a tour of the plant by his son, company president Antonio Neri.

The tour of the Neri facilities was actually backwards from a process flow standpoint. We started with the finishing step, including surface preparation using a shotblasting cell. We made our way up the process stream with a visit to the machine shop where CNC cells machine the castings, particularly the mating surfaces. A robotic welder was also in use, fabricating assemblies. In the same shop area, wooden patterns were being created. Several tour members were captivated by the skilled craftsman making the city crest for a lamppost. Each city has its crest on historic lampposts. Earlier, Neri had commented that the huge variety of lampposts in Italy is a direct consequence of the country not being unified until 1860.

Dominico Neri has led an effort to preserve historic cast-iron pieces, resulting in the creation of the **Museo Italiano Della Ghisa (The Italian Museum of Cast Iron)** in 1991. Originally a collection without a home, the museum opened to the general public in 1998 in cooperation with the Longiano City Council. The 18th-century former

(continued on page 18)



An IMA staff member points out the control panel on the C90 blister pack machine.



Mary Habstritt [SIA] walking through the displays of cast-iron lampposts at the Museo Italiano Della Ghisa.

*Chiesa di Santa Maria Delle Lacrime* (St. Mary of Tears Church) provides an exceptional venue for the display of historic cast-iron artifacts. The museum and the associated foundation have collected a great deal of material on historic cast-iron city furniture, including photos, catalogs, and postcards, allowing the objects to be presented in context. Even more of the collection is housed in a private exhibit space in town that is open to researchers and VIP visitors. We were privileged to see this larger collection, and a warehouse holding a very large collection of the patterns used to make castings. Neri intends to retain every pattern created by the company as an important historical record.

The hills to the south of Bologna were blanketed in snow as we drove to Cesena for two historic site visits on Thursday. The first was the **Biblioteca Malatestiana**, the oldest public library in the western world, opened in 1452 by Malatesta Novello, and donated to the city in his will. UNESCO has recognized the library, whose holdings include over 400 manuscripts from all over Europe, as a "memory of the world" site. The priceless nature of these artifacts meant that we couldn't get beyond an entry area and couldn't take photographs. Some of the manuscripts are displayed in an adjacent hall. Their vibrant colors in rich illuminations were a delight. Although it was not part of our tour, the library holds the archives of the local mining company.

The second visit was oriented around the **sulfur mines in Formignano-Borello**. Sulfur was mined here as early as Roman times, reaching a peak around 1900 when they were the largest sulfur producers in the world. We began with the mining museum in Borello, just across the street from a new monument to the miners. A diorama showed the mine at Formignano shortly before it closed about 1963. There was also a diagram showing the workings that stretched out as far as 4 km from the main shaft. The Montecasini

Company, owner of the mines, had produced a silent film in 1924 showing the mining, refining, and distribution processes, as well as some of the horrible environmental conditions, including the dangerous hard-rock mining, plumes of sulfur dioxide rising from the refining process, and clouds of sulfur enveloping workers during packaging.

At lunch the Mayor of Cesena, architect Giordano Conti, spoke about his commitment to industrial heritage and preservation. He had worked on HAER-like documentation for the Formignano site earlier in his career. The city has bought 19 hectares of the site to eventually be developed into an industrial heritage park.

We did another tunnel trip on Thursday evening, this time to the Bagni di Mario on a hill near the southern edge of Bologna. This water collection and filtering plant is where the water for the famous Neptune fountain originated. Though no longer used, the site, constructed in 1563-64, was a fascinating example of 16th-century civil engineering.

Friday was another packed day. It began with what could be argued were the foundations of Bologna's industrial heritage, the **Chiusa di dam at Casalecchio di Reno** (this was translated in several places as "lock," but there is only a dam, no locksluiceway is more accurate as there is no lock, only a gate). The original dam structure at this natural waterfall site was constructed in the 12th century, making it the oldest still functional dam in Europe and a UNESCO World Heritage site. The Papal Legate ordered a major reconstruction in the late 13th century, which was finally completed in 1363. The dam diverts water into a "power canal" leading into Bologna. Once inside the city walls, the flow is broken down into a complex network of canals and pipes providing waterpower for the city's industries.

The next stop was **Villa Griffoni**, home of the **Museo Marconi**. It was in the upstairs silk moth room that



*The SIA Study Tour group in front of an abandoned building at the former sulfur mine at Formignano.*



**Lido Live, curator of the Ducati Museum, wearing his new SIA cap, poses with one of the company's racing bikes.**

G u g l i e l m o Marconi began his experiments in radio in 1895. The first major transmission was from this room to a point on the hill behind the house. On Dec. 12, 1901, Marconi successfully transmitted signals across the Atlantic. We saw two nearly forgotten technologies used in the first radio receivers and transmitters, the coherer and a magnetic hysteresis detector. They

were entirely supplanted in a few years by crystal detectors and vacuum tubes. Marconi continued as an inventor long after he became wealthy, doing many of his experiments aboard his yacht *Elettra*, a portion of whose hull is on the grounds.

Our final stop of the day was the **Ducati motorcycle factory and museum**. The workers were on a general strike, so the factory wasn't in production. Ducati bikes are hand-built with a yearly production of thirty to forty thousand bikes. (In comparison, Honda produces about nine million motorcycles per year.) Basically, these are racing bikes made street legal. They feature an unusual desmodromic engine

in which the valves are closed by cam action instead of springs. The L-twin cylinder configuration means that the crankshaft has a single throw, also rather unique. Ducati seeks to keep an extremely loyal customer base, similar to the strategy of much larger Harley-Davidson.

The museum is a part of this strategy, hosting over 500,000 visitors since opening in 1998.

Our final activity was a Saturday visit to the **Museo del Tessuto (Museum of Textiles)** in the former Campolmi woolen mill in the Florence suburb of Prato, home of much of the Italian textile industry, particularly woolens. We began our visit to the museum with a tour led by the chief architect, Marco Mattei. An aggressive adaptive reuse effort has preserved much of the exterior structure, while creating new interior spaces. The oldest buildings on the site date to the 17th century, with most of the construction dating to the 19th century. The reuse has tried to stay faithful to the site, but apply modern techniques and materials. For example, the window openings are original, but now are glazed with modern double-pane windows. One area of controversy was the decision to tear down some buildings that had been built using the 14th-century city wall for one side. Mattei was eloquent in explaining his rationale that the wall was an important piece of the overall site, and shouldn't be obscured by simply constructed warehouse buildings that were not important to the site's story.

It would be impossible to thank all the people who offered us their hospitality, expertise, and time to make this an exceptional study tour. A special *grazie mille* to Maura Grandi, director of the *Museo del Patrimonio Industriale*, Paola Papini, and to Mary Habstritt for all their hard work before and during the trip.

Jay McCauley

## IA ON THE WEB

**Atlas Powder** ([pasty.com/pcam/albuu37](http://pasty.com/pcam/albuu37)). Photos and history of the Atlas explosives plant (operated c.1910-60) in Senter, MI.

**Bois D'arc Paving** ([www.smu.edu/anthro/collections/wood-streets.html](http://www.smu.edu/anthro/collections/wood-streets.html)). History and use of wood paving blocks. Bois d'arc (osage orange) was an early preferred material because of its hardness but this gave way to a variety of creosoted woods and patented systems for uniformly shaping and placing the blocks for an even surface during the late 19th c.

**Ohio Memory** ([worldmc.ohiolink.edu/OMP](http://worldmc.ohiolink.edu/OMP)). Among the many historical catalogs of Ohio manufacturers available from this Website are the wonderfully illustrated Marion steam shovels (1888) and Huber threshing machines (1899).

**Old Industrial Buildings on the East River** ([www.gothamgazette.com/article/waterfront/20060104/18/169](http://www.gothamgazette.com/article/waterfront/20060104/18/169)). The Austin, Nichols Warehouse, the Domino Sugar Plant (tour site—2002 Annual Conference, Brooklyn), and the Con Ed Power Plant are pitting preservationists against

developers. *Gotham Gazette* is a Website about New York City. It functions as four publications in one—a daily digest of news; a news operation in itself; a policy magazine; and a reference tool for students and serious researchers.

**Rideau Canal** ([www.pc.gc.ca/lhn-nhs/on/rideau/index\\_e.asp](http://www.pc.gc.ca/lhn-nhs/on/rideau/index_e.asp)). Parks Canada is celebrating the canal's 175th anniversary. Info on special events, 3-D views of canal locks, and historical background on the 202-km canal between Kingston and Ottawa.

**Science and Society Picture Library** ([www.scienceandsociety.co.uk](http://www.scienceandsociety.co.uk)) offers more than one million digitized images, many of IA interest, from the British Science Museum; National Museum of Photography, Film & Television; and National Railway Museum.

"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](mailto:phsianews@aol.com). ■

# 1897 Meadow Bridge Receives Grant

The rural town of Shelburne, NH, has been awarded a \$220,000 "Save America's Treasures" (SAT) grant for rehabilitation of Meadow Bridge, which spans the Androscoggin River close to the Maine border. The award is one of only two competitive SAT grants ever made for preservation of a bridge.

Built in 1897 by the Groton (NY) Bridge & Manufacturing Co., Meadow Bridge is a pin-connected steel Pratt truss. It is composed of three through spans, each just over 133-ft. long, one low or "pony" truss span nearly 74 ft. long, and one short stringer approach span. With a total length of 504 ft., Meadow Bridge is one of the longest pin-connected bridges ever built in New Hampshire, and is one of only a few dozen multi-span pin-connected highway bridges to survive nationwide. The bridge is supported by now-rare cylindrical steel piers rather than by a stone or concrete substructure.

Meadow Bridge was bypassed by a new bridge in 1984. By 2000, one of its four piers was being undermined by riverbed scour, causing two of the trusses to lean and twist. In 2003, recognizing the engineering significance of the bridge, the New Hampshire Department of Transportation (NHDOT) offered to pay 80% of the estimated \$1.4 million cost of rehabilitation if the town would raise 20% of project costs (\$280,000) and assume ownership of the bridge after restoration.

This was a daunting challenge for a town of 380 people, but the community partnered with the New Hampshire Division of Historical Resources to nominate the bridge to the National Register of Historic Places (NR) and to apply for the grant. Meanwhile, NHDOT contracted with Chesterfield Associates of Westhampton, NY, to move the two endangered trusses to temporary storage on the banks of the river.

In the bitter cold of Feb. 2004, a single huge Manitowoc Model 999 crane with a 160-ft. boom picked up the two spans, each estimated to weigh 72,000 lbs., before the removal of the wood plank floor, and placed the trusses gently on temporary trestles on each side of the river. The undermined river pier was later lifted from the bed of the stream to await replacement.



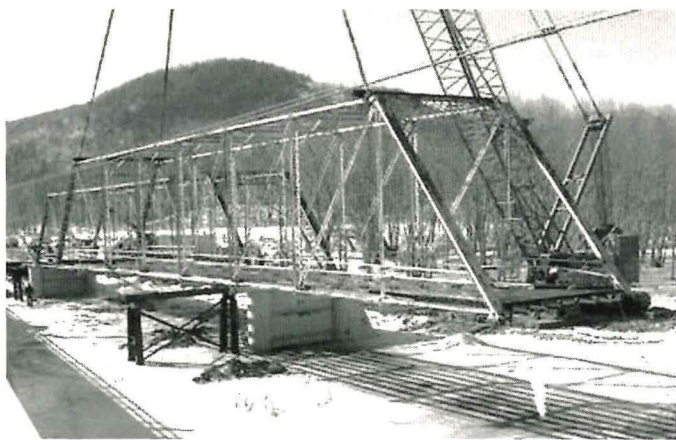
*Meadow Bridge in Shelburne, NH, is one of only two bridges thus far to receive a Save America's Treasures Grant.*

The grant will greatly enhance the ability of the little town and its allies to raise the remainder of the needed matching funds. Grants may be awarded competitively, or may take the form of Congressional "earmarks" made at the discretion of members of the House or Senate. In both cases, the grants require projects to adhere to the *Secretary of the Interior's Standards for Treatment of Historic Properties*, and are monitored closely by the National Park Service and by the appropriate State Historic Preservation Office (SHPO). Some 425 competitive grants have been made between 1999 and 2005. Of these, about 75 have benefited industrial or engineering heritage projects. Prominent among these projects have been Sloss Furnace in Birmingham, the Indiana Cotton Mill at Cannelton, "Washburn A" cereal mill in Minneapolis, several iron-works complexes, and several vessels, including warships.

As a subcategory, however, bridges have not yet fared well under the SAT program. The only other competitive grant for a highway bridge was a \$250,000 award made in 2001 for rehabilitation of the reinforced-concrete open-spandrel Tenth Street Bridge in Great Falls, MT (SIAN, Summer 1996, Summer 1998, Fall 1999).

One reason for the paucity of bridge grants may be the fact that aspiring SAT projects must document a national level of significance even to qualify to apply. There are several ways to document national significance. Already-listed National Historic Landmarks (NHL) attain thirty points in the competitive scoring system. But to date, only eleven bridges in the entire nation have been individually listed among the 2,419 properties and districts that are designated as NHLs.

A second method of documenting such significance is through listing in the NR at a national (rather than a state or local) level of significance. Applicants win twenty-five points when a property is so listed. To demonstrate a national level of significance for a bridge, a researcher must place the span in a nationwide context and show that the bridge is significant among its peers. Given the unevenness with which the various states have documented and pub-



*One of the spans of the Meadow Bridge being lifted by a crane in Feb. 2004.*

James Garvin

lished their inventories of historic bridges, development of a statement that demonstrates national significance can be arduous. In nominating the Meadow Bridge, the NH SHPO was greatly aided by the interest and generosity of colleague SHPOs and bridge historians across the country.

SAT grants have become a powerful preservation tool. The program has generated \$242 million in public grants and private matching funds since its inauguration in 1999. The rarity of grants for bridge preservation, and the relative infrequency with which the program has funded IA projects in

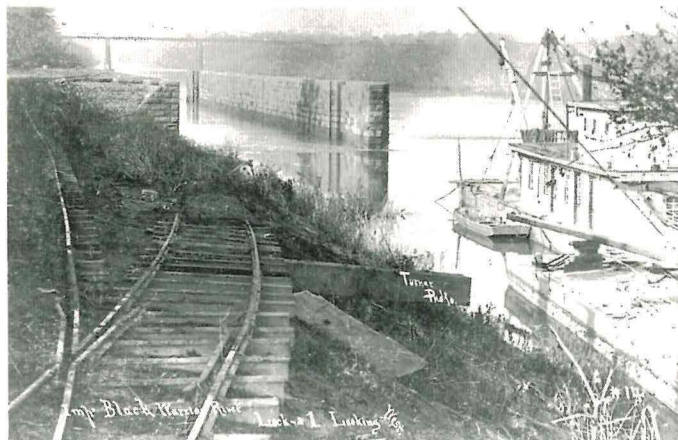
general, point to a problem and an opportunity. The problem is that industrial heritage resources have not often been defined in terms of their national significance or established in the broader public consciousness as among our national treasures. The opportunity is that with more focused advocacy, IA resources, and bridges in particular, may in the future win a larger share of the millions of federal and private dollars that will be generated through this popular program.

James L. Garvin

## Alabama's Black Warrior River Bridge Restoration and Relocation Project

Every so often comes a historic project that everyone agrees is extraordinary. This is the case for the restoration and relocation of an iron bowstring bridge that has stood abandoned in the Alabama woods for more than 40 years and once crossed the Black Warrior River at Tuscaloosa and Northport. Fabricated in 1882, it is one of a handful of King Iron Bridge Co. patented bowstring bridges surviving in the nation.

Tuscaloosa and Northport are at the headwaters of the Black Warrior River, and the towns had a ferry by the early decades of the 19th century. From the 1830s to the 1870s, storms destroyed two ill-fated wood-truss covered bridges and the invading Union Army burned a third. In 1882, Tuscaloosa County decided that the best replacement bridge should be constructed of more "permanent" iron. The King Iron Bridge Co. of Cleveland, OH, was contracted to fabricate and erect the four-span bridge using the tubular bowstring design patented by founder Zenas King in 1867 (see David A. Simmons, "Bridge Building on a National Scale: The King Iron Bridge & Manufacturing Co.," *IA: Journal of the SIA*, v. 15,2, 1989). But even this bridge proved short lived. In the 1890s, the Army Corp of Engineers began a campaign to channelize the river above Tuscaloosa for navigation into the coalfields. The Corps required the bowstring bridge to be replaced in 1897 to clear the way for navigation. The four bowstring spans were taken down



*The Black Warrior Bridge can be seen in the background of this c.1894 view taken during the construction of Lock No. 1, part of a U.S. Army Corps of Engineers' project to channelize the river. The project necessitated removal of the bridge, but the iron bowstring spans were salvaged and reused at other locations in the county.*

but not destroyed, being salvaged for reuse at other locations throughout the county. For most Tuscaloosa and Northport residents, the bowstring bridge soon faded from memory.

In the 1980s, the City of Tuscaloosa began planning the construction of parks and walking trails in an effort to afford public access and recreation along the river. Ken Willis of the planning department was set in charge of gathering background information. During his research, Willis discovered that one of the 1882 bowstring spans might survive. It was found in the northernmost part of the county, abandoned in the woods. Unfortunately, its three sister spans had been scrapped prior to the 1960s.

Willis and others in the community began discussing ways to preserve the bridge and bring it back to Tuscaloosa-Northport. The Friends of Historic Northport formed a bridge committee in 1996, and Willis took over as chairman in 2004 with a plan to restore and relocate the bridge as part of a trail system to be developed atop Northport's levy. The bridge seemed the perfect way to span a gap in the trail over the North River.

The committee has worked methodically, approaching engineers and steel erection contractors to see if the work is

(continued on page 22)



*Black Warrior Bridge as it currently appears abandoned in the woods of northern Tuscaloosa County. It will be relocated to a trail atop the levy in Northport, near its original location over the Black Warrior River.*

Ken Willis

feasible (it is), working with the local newspaper to educate the public about the bridge and its historical significance, and contacting local and state officials to build support. Jim Richardson of the University of Alabama Civil Engineering Department has researched the bridge and identified it as the oldest extant highway bridge in Alabama as part of his work on the Alabama DOT's historic bridge inventory, lending credibility to the bridge's historical significance. The Pittsburgh & Midway Mining Co. has also taken an interest in helping with the bridge rehabilitation, seeing it as a way to carry a needed wastewater pipeline across the North River.

The project has had a high level of cooperation among

city, county, and state officials. The county has transferred ownership of the bridge to the city, and provided staff support to write a grant application for a transportation enhancement grant from the federal and state governments (TEA21). In Feb. 2005, the state approved a grant of \$143,800 to be matched 80/20 by donations from the Friends of Historic Northport. They have already raised the money, including a sum donated by Alan King Sloan [SIA], a descendant of the founder of the King Iron Bridge Co. Bids for the work will be solicited later this year.

Ken Willis

## CHAPTER NEWS

**Montgomery C. Meigs Original** (Greater Washington, DC) held a dinner meeting on Feb. 9, featuring a presentation by Larry Lee [SIA] on the **B&O RR's Howard St. Tunnel** (1895) in Baltimore.

**Northern New England** held its annual meeting on Oct. 15 at the **American Precision Museum** in Windsor, VT. Prior to the meeting, members toured the renovated museum and witnessed demonstrations of several early machine tools. The chapter was host to the 18th Annual Conference on New England IA on Feb. 18 at Plymouth State University.

**Northern Ohio.** On Sat., Aug. 13, members were invited to don parkas and "chill out" on a tour of **Gateway Cold Storage** in Cleveland, formerly known as Federal Cold Storage (FCS). The six-story plant, of reinforced-concrete construction, was built in 1927-28 by the City Ice & Fuel Co. to serve the Northern Ohio Food Terminal, which modernized the city's wholesale fruit and vegetable markets. In addition to the cold storage of foodstuffs, FCS manufactured and supplied ice to railroad cars bringing produce to the terminal from all points of the country. Two original "Ball's Giant" compressors, built by Ball's Ice Machine Co. of St. Louis, are still in place although no longer used. The chapter held its annual meeting at Cleveland State Univ. in Dec. Chip Syme presented a slide show on the **Hulett unloaders**, and members discussed plans for upcoming tours, including the 2006 SIA Fall Tour to Youngstown.

**Oliver Evans** (Greater Philadelphia) held its annual meeting on Nov. 1 with guest speaker Fred Quivik [SIA] who gave a presentation on South Philadelphia's industries from manufactured gas to rubber cement. The 22nd annual dinner was held on Feb. 3 with John Bowie [SIA] presenting on the John Grass Wood Turning Shop. Founded by a German immigrant in 1863, the small industrial shop in the Old City neighborhood of Philadelphia has many of its belt-driven machines still in use and currently provides historically accurate details for restoration architects and home owners. Options are being explored for its future as a small, operating industrial museum.

**Roebling** (NY-NJ) continues its strong role advocating for the preservation of endangered historic industrial sites.

Mary Habstritt (President) recently spoke before the Friends of Hudson River Park on the history of the elevated railway known as the **High Line**, built in the early 1930s to separate the grade of freight traffic from upper Manhattan's West Side streets (SIAN, Spring-Summer 2004). Plans are currently underway to adaptively re-use the abandoned viaduct as a rail-to-trails project. The chapter has also been working to bring attention to the 1913 **Austin-Nichols Warehouse** in Brooklyn's Williamsburg, a reinforced-concrete building designed by noted architect Cass Gilbert. On Oct. 29, Roebling presented the 25th Annual Drew Symposium on the IA of the NY-NJ area, and on Jan. 29, it held its annual meeting, also at Drew University.

**Samuel Knight** (Northern CA) held its annual meeting at the **Willits Roots of Motive Power Festival** in Sept. Following a brief meeting to re-elect the current officers, the group was off to see the live steam and diesel action. In Dec., members toured the **National Archives, San Bruno Branch**, receiving an overview of the types of records stored there, most of which cover federal activities in central and northern California, Hawaii, Nevada, and Pacific island territories. The archive is particularly strong in naval and environmental history. This was followed by a visit to the **Hiller Aviation Museum** in San Carlos to view its collection of about 50 aircraft, including the Hiller 360, the first inherently stable helicopter to be licensed by the FAA in 1945 ([www.hiller.org](http://www.hiller.org)).

**Southern New England** toured the automobile and aircraft collections of the **Collings Foundation** (Stow, MA) in Oct. The collection, which usually is not open to the general public, features many important classic cars and racers, including a 1901 Oldsmobile and 1914 Stutz Bearcat ([www.collingsfoundation.org](http://www.collingsfoundation.org)).

**Wabash & Ohio** (Indiana-SW Ohio) members toured the **Moser Tannery** near New Albany, IN, in Nov. The tannery, founded in 1863 and closed in 2002, is on a 54-acre site and consists of 17 buildings, some of which are slated for possible redevelopment as condominiums. Developers hope to take advantage of the site's attractive riverfront location on the Ohio River. ■

**Heritage Conservation Network (HCN)** presents a series of five hands-on building conservation workshops in 2006. The workshops last from one to two weeks and feature an expert who teaches and guides participants as they work on a historic structure. Architects, contractors, preservation specialists, and laypersons are joined at the site by local volunteers working to preserve their heritage. The topics, dates, and locations of the workshops are as follows: **Mill & Mill Race Conservation**, June 18-July 1, Francis Mill, Waynesville, NC (recipient of a 2005 SIA Industrial Preservation Grant; see *SIAN*, Fall 2005); **Documentation & Condition Assessment**, July 9-15, H. S. Gilbert House, Virginia City, MT; **Conservation of Painted Stucco Detailing**, July 30-Aug. 12, 17th-c. Manor House, Oplotnica, Slovenia; **Stabilization of Arched Stone Bridge**, Sept. 10-23, Weisel Bridge, Bucks County, PA; **Adobe Conservation & Heritage Management**, Oct. 15-28. Historic Mining Town of Cusihiuriachi, Chihuahua, Mexico. HCN is a non-profit organization dedicated to the preservation of architectural heritage around the world. Workshop costs range from \$190 to \$685 per person per week, excluding transportation to the site. Complete details and registration: [www.heritageconservation.net](http://www.heritageconservation.net); (303) 444-0128.

**Short Film on Bethlehem Steel Available.** Photographer Marc Reed, in collaboration with Garden Bay Films (Lambertville, NJ), has released *Almost Gone*, a short film documenting the abandoned Bethlehem Steel plant (tour site—2002 Fall Tour, Lehigh Valley) in Bethlehem, PA. Proceeds from the film's sale are being donated to Save Our Steel, a coalition of public and private organizations and individuals dedicated to assisting with the long-term preservation of the plant, some parts of which will be redeveloped as a museum, and other parts redeveloped for a casino and other commercial uses (*SIAN*, Winter 2005). At 20 minutes in length, the *Almost Gone* DVD is mostly a montage of still photos of the abandoned blast furnaces, sheds, and shops, mixed with video and juxtaposed against archival photos. The DVD contains no narration, but is scored to music. \$13 ppd. Order info: [www.saveoursteel.org](http://www.saveoursteel.org).

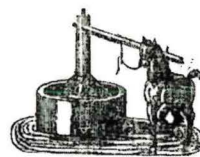
The recently released movie, *North Country*, features a number of scenes of **Minnesota's Iron Range**, including views of mines and industrial facilities, some of which were sites during the 2000 Annual Conference—Duluth. The movie received mixed reviews, but the scenery is quite engrossing for those with an enthusiasm for IA subjects.

**Industrial History Program for Teachers.** The Tsongas Industrial History Center invites educators (K-12) from across the U.S. to Lowell, MA, for a week-long summer program, *Inventing America: Lowell and the Industrial Revolution*, funded by the NEH. The workshops combine scholarly presentations with on-site investigations of the

canals, mills, worker housing, and exhibits of Lowell National Historic Park. The workshops also use drama, historical fiction, hands-on simulations, and field studies at Old Sturbridge Village, Walden Pond, and Concord museums. Three week-long workshops are offered: June 25-July 1; July 9-July 15; and July 30-Aug. 5. Housing is available at Lowell's Doubletree Hotel or at Univ. of Mass.—Lowell. \$500 stipends paid toward expenses. CEUs/PDPs and graduate credit available. Info: Ellen Antsey, Tsongas Industrial History Center, Boott Cotton Mills, 115 John St., Lowell, MA 01852; (978) 970-5080; [ellen\\_antsey@uml.edu](mailto:ellen_antsey@uml.edu); [www.uml.edu/tsongas/NEH](http://www.uml.edu/tsongas/NEH).

**Railroads and the American Industrial Landscape: Ted Rose Paintings and Photographs** is an exhibit running Mar. 9-May 29 at the Haggerty Museum of Art, Marquette Univ., Milwaukee, in collaboration with the Center for Railroad Photography & Art. The exhibition offers an opportunity to experience the visual beauty of railroads and industry. It includes a combination of photographs and watercolor paintings. Many of the photographs, taken some 30 years before the paintings, have never been exhibited before and provide a compelling documentation of the last steam railroading in North America. Several of the paintings are local studies, some even of areas within a mile of the Haggerty Museum. Rose's work, however, also reaches beyond the specific confines of Milwaukee and the Midwest. As he wrote in his book, *In the Traces* (2000), "My reality often involves railroad subjects. Railroad places are a significant part of the landscape and the reason much of the country looks the way it does. The American place is often a railroad place, manmade and human scale—urban, industrial, or rural." Subject matter aside, it is also a fine display by an accomplished realist. Betsy Fahlman [*SIA*] gave the opening lecture. Info: (414) 288-1669; [www.marquette.edu/haggerty](http://www.marquette.edu/haggerty); [www.railphoto-art.org](http://www.railphoto-art.org). ■

**BARK**



**MILLS.**

*Leather tanning was once a major industry in and around Dorchester, south of Boston, and the Dorchester Historical Society is seeking information about the machines used in the 18th and 19th centuries to grind hemlock and oak bark to extract tannin for tanning. The above engraving is a detail from a document, dated Dec. 27, 1811, that sold the right to use Cornelius Tobey's 1807 patent for an improvement to bark mills. Ebenezer Clapp of Dorchester purchased the patent right. Please send references and info: Earl Taylor, DHS, William Clapp House, 195 Boston St., Dorchester, MA 02125.*

# CALENDAR

## 2006

**Mar. 30-Apr. 1:** The 2nd American Natural Cement Conference, Washington, DC. Paper sessions on the history and conservation of natural cement. Site tours. Info: [www.naturalcement.org](http://www.naturalcement.org).

**Apr. 27-30:** Preserving the Historic Road Conference, Boston. Info: [www.historicroads.org](http://www.historicroads.org).

**May 15-19:** National Park Service's Archeological Prospection Workshop, St. Simons, GA. Info: Steven L. DeVore, NPS Midwest Archeological Center, Federal Bldg., Rm. 474, 100 Centennial Mall North, Lincoln, NE 68508; (402) 437-5392, ext. 141; [steve\\_de\\_vore@nps.gov](mailto:steve_de_vore@nps.gov); [www.cr.nps.gov/mwvac](http://www.cr.nps.gov/mwvac).

**June 1-4:** SIA ANNUAL CONFERENCE, ST. LOUIS. Info: [events@siahq.org](mailto:events@siahq.org); [www.sia-web.org](http://www.sia-web.org).

**June 8-10:** Business History Conference Annual Meeting, Toronto. Info: BHC, Box 3630, Wilmington, DE 19807; [www.thebhc.org](http://www.thebhc.org).

**June 8-11:** Rails in the Rockies II: 2006 Railway & Locomotive Historical Society Convention, Albuquerque, NM. Rail excursions in northern NM and southern CO. Info: [www.rhls.org](http://www.rhls.org).

**June 9-11:** Railroad Station Historical Society Convention, Helena, MT. Tours of stations, bridges, tunnels, roundhouses, and shops; annual banquet with speaker. Info: Art Peterson, 3200 Gordon Dr., Greenville, NC 27834; (252) 756-7380; [stationarchives@msn.com](mailto:stationarchives@msn.com).

**June 14-17:** Vernacular Architecture Forum Annual Meeting, New York. Theme: City Building. Info: [vernaculararchitectureforum.org](http://vernaculararchitectureforum.org).

**July 3-9:** Brunel Bicentenary Week, Bristol and London, U.K. Tours and conferences explore and evaluate the engineering legacy of Isambard Kingdom Brunel (1806-1859). Info: [www.ice.org.uk/conferences](http://www.ice.org.uk/conferences).

**July 18-23:** National Railway Historical Society Annual Convention, New Philadelphia, OH. Seminars, tours, and rail excursions. Info: Buckeye Rails 2006, 2025 Zumbuhl Rd., PMB 80, St. Charles, MO 63303.

**Sept. 12-14:** World Canals Conference, National Canal Museum, Easton, PA. Theme: Industry to Recreation: Greening the Coal Canals. Info: NCM, 30 Centre Sq., Easton, PA 18042-7743; [www.canals.org](http://www.canals.org).

**Sept. 14-23:** XIII Congress of The International Committee for the Conservation of Industrial Heritage (TICCIH), Terni, Italy. Paper sessions and multi-day tours to Italian industrial centers and museums. Info: Congress Secretary TICCIH 2006, ICSIM—via I Maggio, 23-5100 Terni, Italy; fax 0039 0744 407187; [www.mnactec.com/TICCIH/conferences.html](http://www.mnactec.com/TICCIH/conferences.html).

**Sept. 28-Oct. 1:** SIA FALL TOUR, YOUNGSTOWN, OH. See article in this issue. Info: [events@siahq.org](mailto:events@siahq.org); [www.sia-web.org](http://www.sia-web.org).

**Oct. 12-16:** Society for the History of Technology (SHOT) Annual Meeting, Las Vegas, NV. Info: [www.shot.jhu.edu](http://www.shot.jhu.edu).

**Oct. 19-21:** 28th Annual North American Labor History Conference, Wayne State Univ., Detroit, MI. Theme: Technology, Environment & Work. Info: Janine Lanza, Dept. of History, 3094 Faculty Admin. Bldg., WSU, Detroit, MI 48202; (313) 577-2525; [jmlanza@wayne.edu](mailto:jmlanza@wayne.edu).

**Nov. 3-4:** Food Chains: Provisioning, Technology, and Science Conference, Hagley Museum & Library, Wilmington, DE. Info: Carol Lockman, (302) 658-2400; [clockman@hagley.org](mailto:clockman@hagley.org).

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