

SOCIETY FOR INDUSTRIAL ARCHEOLOGY

NEWSLETTER

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P.R. SUGAR MACHINERY RESTORATION

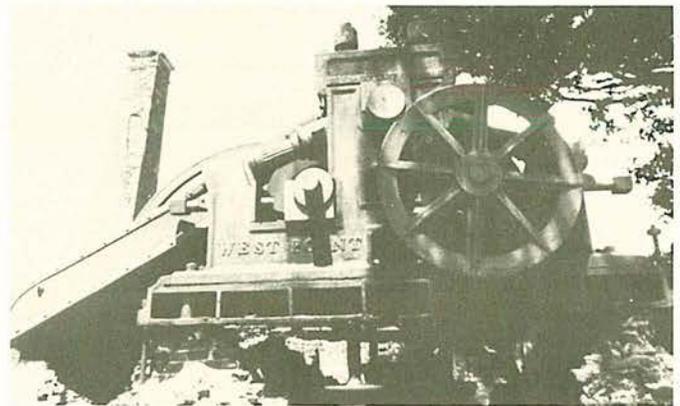
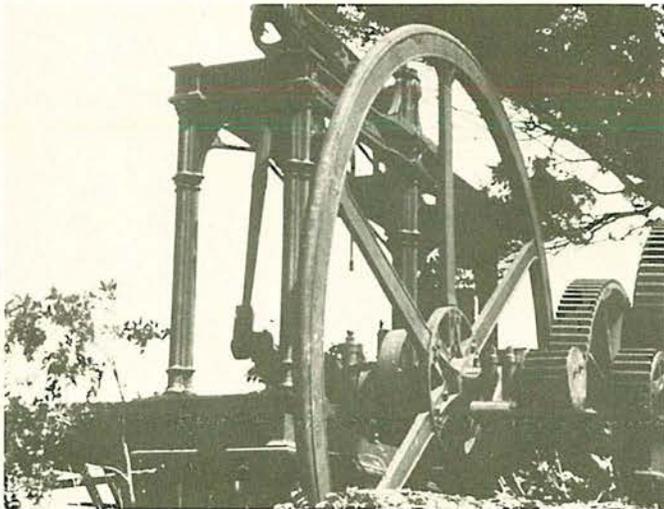
Along with the increasing preservation and reconstruction of industrial sites, there is a rising awareness that however valuable such work, its meaning is increased vastly if the interpretation of the site for the public can be extended beyond traditional verbal and graphic means to include actual operation. This commonly is done at flour mills, saw mills, and dozens of craft operations at museum villages. Beyond these relatively simple processes the question of day to day – or even periodic – operation for the public becomes far more difficult in terms of raw material supply, product disposal, maintenance, and obtaining operating personnel. We've just noted the Tannehill Furnace proposal; equally interesting and important to the future of this sort of thing is a plan by Francisco Javier Blanco, Exec Dir of The Conservation Trust of Puerto Rico (San Juan) eventually to put into full operation the sugar production complex of the Trust's Hacienda La Esperanza plantation in Manati, west of San Juan. Established early in the 19thC, it reached its full extent by mid-century with 2265 acres.

Focus is on the sugar factory, which contains remnants of the evaporating equipment. But of most importance are the almost fully intact 3-roll sugar (cane-crushing) mill, the high-pressure beam engine that drove it, and the intermediate gearing, all on a very considerable scale. The only principal element missing is the boiler. The machinery was built by the West Point Foundry of Cold Spring, N.Y. [SIAN 2:4:4 & 3:6:8] in 1861 (only the mill actually bears the signature & date, but it is assumed that the engine, typical of their work at that time, is by the same firm.

The engine is heavily Gothicized (the entablature and beam supported by 6 columns), its flywheel is 18 ft in diam, and the power was transmitted to the mill by double-reduction gearing of which the largest gear is 10 ft in diam.

The restoration of the site is to proceed with care, an important element of the preliminary study being a HAER survey scheduled for summer 1976. Sr Blanco's plan is ambitious, certainly feasible given adequate funding, and exciting. Details of progress will, of course, be reported.

Information on WPF's engines and other machinery of the period is urgently sought.



(l) The West Point beam engine & drive gearing to mill. (r) Side view of the three-roll cane crushing mill.

TANNEHILL BACK INTO BLAST NEXT SEPT

Historic Tannehill Furnace No 1 in Tannehill Historical State Park near McCalla, Ala., under reconstruction for the past several years, is to be recharged and a heat run on 19 Sept in a ceremony probably unique in the preservation of 19thC iron furnaces. Of the dozens of stone-built blast furnaces preserved in N America and W Europe – even in those few instances where the installation is entirely intact – there never has been a serious proposal to put one in blast because of the difficulties of obtaining charcoal and locating people with knowledge of early blast-furnace operation. Tannehill operated for less than a decade, starting in 1855. The progress of this venturesome undertaking will be reported on from time to

time during the summer. If the event is a success, it should serve as inspiration to do the same at such essentially complete furnace sites as Cornwall and Hopewell, Penna., and Saugus, Mass.

1976 ANNUAL CONFERENCE 23-26 April

In LOWELL, MASS, recall, with an extraordinary program planned, one of the highlights of which will be the operation 10 AM - 2PM of Taylor's Sawmill, the only operating up-&-down sawmill in the East. Island Pond Rd, SE of Derry, N.H.

INCENDIARISM

We hesitate to persist in reporting the appalling number of fires in historic industrial structures as they depress us all, but they *are* part of the news and a general awareness of the constant threat posed by fire – both accidental and deliberate – may help to further the protection of structures both in use and awaiting re-use.

SENECA FALLS [N.Y.] GAS HOLDER HOUSE. Something over a dozen of these special-purpose structures—erected c1860-1880 to enclose gasholders – survive in the NE US, most of the gasholders within them long since removed, used simply for storage (as is that at Troy, the SIA motif). The one most imaginatively adapted had been turned into an automobile showroom. It burned nearly to the ground, full of years and Dodges, early in 1975.

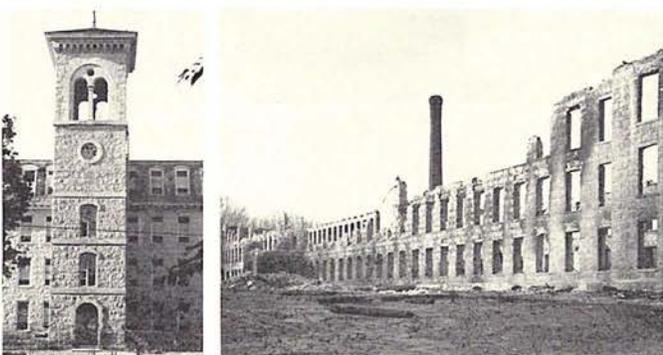


Seneca Falls Gasholder House, c1875-1975.



Geoffrey N. Stein photograph.

MANCHAUG NO. 2 MILL. A stately, formal, Lombard Romanesque structure of 1869, rendered in granite, in the mill town of Manchaug, Worcester Co., Mass., among New England's finest and least-known cotton mills; in recent years home to some 90,000 Rhode Island Reds. Total gutting. And the stench!



Manchaug No. 2 Mill, 1869-1975.

Steve Dunwell photograph.

ERIE SHOPS, Susquehanna, Penna. On 5 Nov. over half of the Erie RR's great locomotive (later car) repair complex, c1865, burned, heat damage necessitating ultimate demolition of the remainder of the buildings. The recent usage of the site was spotty. Abandoned by the Erie in 1969, the handsome stone shops were leased by a succession of industrial tenants with periods of vacancy between, but never used at anything like their full potential. Prior to the fire the buildings were vacant and the fire appears to have been caused by the ubiquitous

"workman's torch" while some scrap steel was being salvaged. With destruction of the shops, the only railroad-related structure that survives in this once vital Erie Center is the Starrucca House [SIAN 4:1], the line's neo-Gothic station-hotel, itself in periodic peril as its preservation and re-use seems alternately assured and hopeless. Both depot and the entire shop complex were fully photographed and drawn by HAER in 1971 as part of its Erie Railway Survey, which included extensive low-level aerial photography of the entire site.

BUFFALO CENTRAL TERMINAL

Although best remembered for Cincinnati Union Terminal, their 1929 masterpiece, architects Fellheimer & Wagner earlier created a very important structure for the NYCentral in Buffalo. In *The Railroad Station*, Carroll Meeks called it an "efficient machine," an apt definition for the monumental 1927 Central Terminal.

It is still intact, handling 8 trains a day, but located 2 miles from downtown. Amtrak wishes a new, small facility in the city which would leave the Terminal a useless hulk in Penn Central's shaky hands. Its size and location, once assets, now are liabilities for adaptive reuse. In 1927, 30 acres and \$14 million were needed to provide the yards, terminal and related facilities for Buffalo's huge rail volume. The land requirement pushed it out of the downtown area, limiting possible new uses.



Stylistically, Buffalo Central Terminal is simple Art Deco, although certain areas, such as the women's lounge, offer rich motifs. Rather than architectural distinction, the Terminal's hallmark was functional efficiency on a massive scale.

It is, in a word, gargantuan, built to handle 3,200 passengers an hour. There is a 16-story office tower and a 294' x 66' passenger concourse with a 58'-high barrel vaulted ceiling. The concourse connects the restaurant, ticket area, and 108' x 59' waiting room – now all unused. In addition, a 480' long train concourse extends out 21' above track level and is connected with the platforms by 14 covered ramps, each 220' long.

Today BCT is one of the country's last operating examples of the ultimate "modern" station, designed to accommodate the peak of American passenger rail travel. Perhaps that use will continue, though at a much slower pace. If not, we may hope that it will be favorably regarded for new uses. *Dennis J. Connors, Landmarks Ass'n of Central N. Y.*

NATION'S SHORTEST RAILROAD RE-OPENED

In 1898, Daniel Chester French (sculptor of the *Minute Man* at the North Bridge in Concord and the *Seated Lincoln* in the Memorial in Washington) had his architect friend, Henry Bacon, design and build a "first rate" studio at Chesterwood, his new summer estate in Stockbridge, Mass. Unique features are the railroad tracks and 22-ft-high double doors, incorporated to answer a lighting problem common to all sculptors. A piece of sculpture under controlled indoor lighting looks

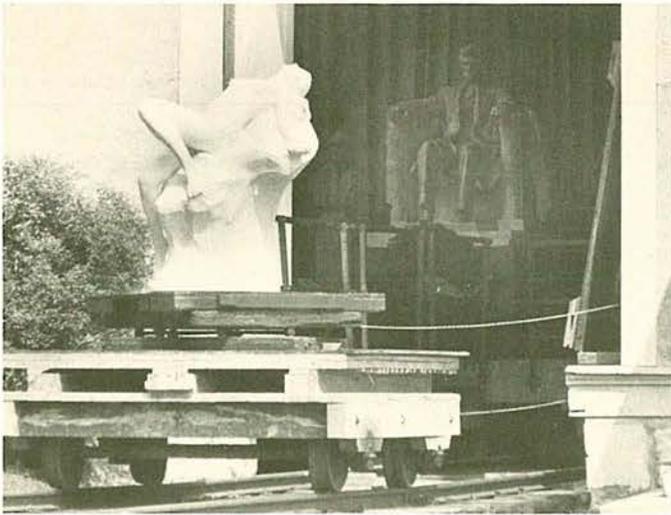
SEQUELS

Hunsecker Bridge. Last issue carried a story on the new covered bridge built to replace one floated away by the hurricane Agnes floods in 1972. We reported that the old span was damaged beyond repair. The following letter from *Nov Civil Engineering* adds an interesting note to the undertaking, and points up the flexibility of structural timber.

Editor: . . . We salvaged the wood from that bridge and rebuilt it 25 mi SW of its original site, spanning Mill Creek in the Lancaster Co [Penna.] Park. We engaged a house mover to relocate the skeleton for us in one piece, 90 ft x 11 ft x 14 ft high. Lancaster Co installed new foundations . . . Amish labor . . . added new siding and roofing. Total cost: \$70,000. The bridge was tested with 17.2 tons, with 1/4-in deflection. It was opened for use in March 1975. *Thomas F. Shirk, County Engineer, Lancaster Co.*

Coolidge Mill. We reported in SIAN 4:4/5 the acquisition by the city of Manchester, N.H. of this ex-Amoskeag Co. mill. It now has been purchased from the city by Executive Avnet Co., maker of electrical wire and cable.

The Alexander Hamilton. We noted recently the formation of the Committee to Save the Alexander Hamilton, the Hudson River Day Line's magnificent 350-ft side-wheel steamer (the last afloat on the eastern seaboard) that operated from 1924 to 1971. Since retirement she has been knocked about mercilessly, one proposed preservation scheme after another going sour. She presently is resting uneasily on the mud at Atlantic Highlands, N.J. becoming progressively tatty awaiting conversion to a combined restaurant-museum. Help seems to be at hand in the form of redoubled efforts by the CTSAH, which is attempting to work cooperatively with her present owners. Another ray of hope is a pending Congressional bill (S 228) sponsored by Sens Kennedy (D.Mass) & Buckley (R.NY) proposing establishment of a Natl Trust for Preservation of Historic Ships. A companion House bill has been introduced. Support, both moral and financial is needed. The former: Write your Congressmen encouraging the legislation. The latter: join CTSAH, Box 817, Time Square Stn, NYC 10036. A quarterly newsletter for \$5.



different when placed outdoors. As a solution, French devised a means by which he could move statues outside to study the effects of natural lighting. Five-ft gauge railroad tracks, laid on a sturdy sub-structure inside the studio, lead onto a terrace stretching 40 ft beyond the studio. When the tall double doors and series of trap doors, covering the tracks, were opened, two or three assistants were able to shove the railroad construction-gang push car, with the statue, into the sun.

The Natl Trust, which administers Chesterwood, has repaired the entire system so that for the first time in 44 years what perhaps is the world's shortest railroad can be used to demonstrate to the visiting public the sculptor's concern for the effect of natural lighting on his statues. *Paul W. Ivory, Chesterwood.*

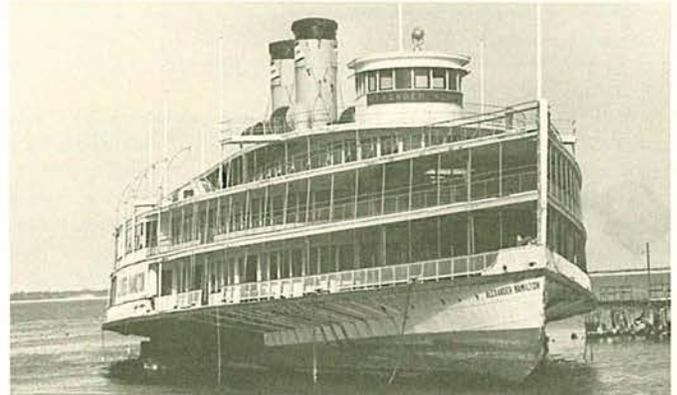
REGIONAL NEWS - CLEVELAND

Cleveland's "Flats," the industrial lowlands flanking both banks of the Cuyahoga just west of downtown, is currently the site of a kind of renaissance in the city's cultural life. Two major projects suggest that this historic industrial landscape will (appropriately) form one basis for urban revitalization:

(1) VSM Corp of Independence, Ohio, has found an adaptive re-use for the former Woodland Ave & West Side St Ry power station (1892). They have gutted the building and site work has begun on "The Powerhouse," a multi-million dollar entertainment, commercial, and office complex, with a theater, cinema, restaurants, shops, artists' studios, and offices, scheduled to open in late spring.

(2) Higbee Development Corp will combine old and new buildings into a commercial and entertainment complex known as "Settler's Landing," to occupy the site where Cleveland's first settlers disembarked after their lake journey west from Buffalo. The project will be adjacent to the E end of the 1912 Detroit-Superior High Level Bridge (Natl Register) and just across the river from the "Powerhouse." So far, one warehouse has been converted for bar and restaurant use and features a "beer porch" overlooking the Cuyahoga. Daniel H. Burnham's 1891 Western Reserve Bldg (NR), an office building on the edge of the project and close to downtown, is undergoing exterior restoration and interior remodeling. Designer of the project is Lawrence Halprin ("Ghirardelli Square") of San Francisco.

NO COMMENT: Elsewhere, the long-abandoned Union Stockyards, once part of Cleveland's third largest industry, were demolished last year to make way for what has been described as the "largest model K-Mart built in the country." According to the developer, Developers Diversified, Ltd, demolition of the stockyards building took three weeks: "That old building was well constructed with reinforced concrete and heavy timber and in amazingly good shape." *Carol Poh Miller, Cleveland.*



Dan Donovan photograph.

MISC SITES, STRUCTURES & OBJECTS

The Chunnel. The legendary tunnel beneath the English Channel, linking England & France, a project that has been on-again off-again since 1802, of which a short length actually was bored by a full-area tunneling machine c1880, and which recently has been very much alive in the hands of a British-French consortium planning a \$3-billion bore, has again faltered, apparently fatally, due to the costs of the high-speed rail link between the tunnel and London, which suddenly soared from \$278 to \$860 million. France still is keen, seemingly, but the British, having taken the recent Anglo-French Concorde bath more to heart (buyers for which are staying away in droves), appear to have had it with the whole boring business.

THE 19TH-CENTURY IRON BRIDGE

32,000 BRIDGES DETERMINED STRUCTURALLY DEFICIENT OR FUNCTIONALLY OBSOLETE

Americans depend on thousands of little bridges across countless streams to tie their communities together and to link those communities to the larger world. Most of these bridges are iron trusses, prefabricated during the late 19th and early 20th centuries by numerous bridge companies in the eastern U.S. and shipped to state, county and local road departments. Others include single- and multiple-span concrete arches built during the early decades of the 20thC. Many of these bridges are approaching 100 years of service and wearing out – all at once it seems.

What prompts this comment is the recent press on a Genl Accounting Office report on unsafe bridges requested by Rep Edward I. Koch (D-NY). Federal concern about the condition of the Nation's bridges stems from the collapse of the Silver Bridge over the Ohio at Point Pleasant, W. Va. in 1967 – the worst bridge disaster in modern history – in which 46 lives were lost. In 1968, Congress passed the Highway Safety Act, establishing national bridge inspection standards and a training program for bridge inspectors. In 1970 a program was established requiring all bridges in the Federal aid highway system to be inventoried and classified as to serviceability, safety and "essentiality for public use"; then assigned a priority for replacement. The inventories have been completed and Congress has authorized \$475 million for replacement for the fiscal years 1972-76. As of March 31, 1975, 351 replacements have been approved by the Fedl Highway Admin. At the current funding rate, it will take 80 years to replace all the bridges. If all 32,000 were to be replaced at once, it would cost \$10.4 billion.

While Koch's concern – the threat to lives and property posed by unsafe bridges – is valid, there is another angle: Some of these bridges are historically significant to the history of American bridge engineering and transportation. Unlike the covered wooden bridge, the metal truss and concrete arch generally go unrecognized by laymen and preservationists as having significance. But they are considered by HAER to be one of the "endangered species" of engineering structures and thus should be of immediate concern.

When viewed with an appreciative eye, metal trusses and concrete arches are wonderful expressions of the engineer's art. Environmentally, the more modest spans maintain a sense of scale with the rural landscape not duplicated in the concrete girders that replace them. Those located near towns and cities function to slow the pace of traffic, contributing to the preservation of human scale and the 19thC character of many historic towns.

From an engineering point of view, the truss bridge is indigenous to America. No other country experimented with the truss concept as widely as we did during the 19thC. With unlimited wood, and the need to construct railroads and highways as quickly and cheaply as possible, the timber truss

was a natural solution. Once the trunklines opened up the hinterland, the people who moved westward built a network of primary and secondary roads to connect their farms with market towns and the towns to larger commercial centers. The solution to crossing thousands of streams and rivers was the prefabricated metal truss which evolved in this country from the wooden truss about the middle of the 19thC. Manufactured first in cast and wrought iron, and later in steel in a bewildering number of configurations and styles, hundreds of bridge patents were taken out during this period.

With the covered bridge more or less recognized, it is time to move on to the metal truss and the concrete arch. Most states have identified their wooden covered bridges and nominated them to the Natl Register, Vermont and Ohio the most active in this. Other states, such as N.Y. and Va., have begun comprehensive surveys of their metal trusses.

Two things are being advocated here. First is accelerating the identification and assessment of bridges on a regional or statewide basis. It is indeed unfortunate that the themes pertaining to historic bridges – Transportation & Communication; Engineering & Technology – are the most neglected in the historic resource inventories compiled by the Nation's State Historic Preservation Offices and by the Natl Park Svc's Landmarks Program. (For the record the theme Commerce & Industry has been neglected as well.) Early awareness of historic bridges will, in the long run, save time and money, and avoid frustrations on the part of highway contractors, engineers, and preservationists. HAER has experienced an increase in the number of cases where bridge replacement projects have been stopped in progress to assess the historical significance of the structure being torn down, and the number of requests by State Historic Preservation Officers to assess the significance of threatened bridges has increased. SHPOs must appreciate that such evaluations are just about impossible where there is no context, no basis for comparison with the other extant bridges in the state. Having such inventories, it would be possible to advise the Federal agency involved, or the regional planning commission, or the county engineer of the bridge's significance. Appropriate steps could then be taken at a project's earliest planning stages to mitigate the adverse effects. This is the purpose of our historic preservation and environmental laws.

The second point is that just because an old bridge is designated "historic," does not necessarily mean it must be preserved *in situ*. To allay the fears of highway engineers and planners, preservation laws are not meant to thwart plans for bridge replacements intended to protect lives and property. What IAists and preservationists seek is consideration of historical value. Then, if comprehensive statewide bridge surveys were available, it would be possible to determine which historic bridges should remain *in situ* and sympathetically restored or strengthened; which might be dismantled and stored for possible re-erection elsewhere; and which should be recorded, so their loss would not be total if in the final analysis they could not be saved. *Eric N. DeLony, HAER.*

EARLY IRON BRIDGE RECYCLED

The prefabricated metal truss bridge was an innovative engineering solution to the problem of spanning small streams and rivers during the last half of the 19thC. Such bridges were assembled from standard "shelf" components by numerous companies in the eastern U.S. to specifications of local buyers. As the capacities of these bridges became inadequate or transportation routes changed, they often were disassembled and moved to other sites where they continued to serve usefully.

A portion of this scenario was interestingly played out recently in Canajoharie, N.Y. where an abandoned "100-year-



Abandoned Canajoharie Creek Bridge on original site. *Anthony Neffeo photograph.*

old" iron bridge was acquired by the Central N.Y. Park & Recreation Commn for use as a footbridge at the Old Erie Canal State Park near Syracuse. Acting on information supplied by N.Y.S. Dept of Transp engineers, the Commn acquired the bridge at no cost from its owner, Dell Laboratories, and moved it to their shop near Kirkville where it will be restored and repainted during the winter. In the spring, the bridge will be reassembled over the canal near the Cedar Bay "wide waters" as part of the canal park being developed there. Not only has the Commn been able to acquire a

canal-era bridge for this important "open-air museum," but its acquisition has permitted cancelling plans for a new timber footbridge there.

The Canajoharie bridge consists of two 62-foot segmented bowstring trusses which support a timber deck. Builder and date are unknown, but it is thought to have been erected c1875, and is of a type known to have been built during that period by the Phoenix Bridge Works of Philadelphia using their patented "phoenix column." *William P. Chamberlain, NYS DOT.*

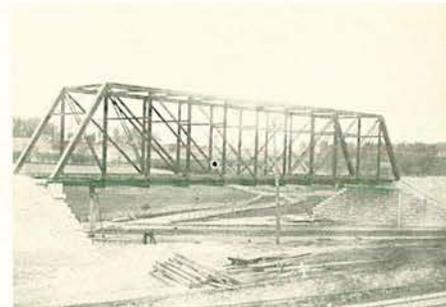
BRIDGES & THE B&O'S PHILADELPHIA BRANCH

Anxious for a slice of the lucrative Baltimore-N.Y. freight and passenger traffic – the exclusive territory since about 1870 of Pennsylvania RR affiliated lines – the Baltimore & Ohio in the mid 1880s constructed a Philadelphia "Branch" parallel to and slightly NE of the PRR line. It covered the 100 miles between Balto. and Phila.; the Phila.-N.Y. leg operated over leased pre-existing lines. The B&O at the time was flush and ways & structures were strictly 1st class. All bridges were iron and/or steel, but with rapidly rising locomotive weights over the years following the line's opening, the superstructure of most had been replaced by heavier steel spans by 1910. Three survive, however.

The crossing of the Brandywine at Wilmington, Del., originally by a high-level structure of Pratt-type deck spans, pin-connected as were all bridges on the line (photo), in 1910 was succeeded by a masonry viaduct. As there was no practical means of building this on the same alignment without traffic disruption, the route was relocated slightly up-river. Rather

than demolish the still good structure, the B&O sold it to the city of Wilmington which in 1920 converted it to a highway bridge, now known as the Augustine Bridge. The use of stone arches in several of the replacement spans on this line and elsewhere on the B&O system was the result of PRR control of the B&O at that period. (Data from Herbert H. Harwood [SIA] and HAER: "The Delaware Inventory.")

Before the Phila. Branch was physically joined to the B&O's lines south and west at Balto. in 1895, connecting traffic was carried across Baltimore Harbor by car ferries. The S end of the new branch, in reaching the Harbor, crossed a branch and the main line of the Phila. Wilmington & Balto. (PRR). Both crossings were by double-intersection Pratt through trusses, both skewed, built by the Edge Moor Iron Works near Wilmington in 1885. The later B&O all-rail route bypassed the short end section of the Phila. Branch containing the two bridges, it becoming a true branch with service light enough to be accommodated by the original structures. As a consequence, both remain, among the earliest metal RR trusses in service in N America. (We'd be interested to learn of earlier ones. Ed.)



B&O RR, Philadelphia Branch Bridges, 1885-86. (l) Brandywine River Bridge then, and (c) now. (r) Bayview (Baltimore) Bridge over PW&B (now Penn Central) mainline, then, but unchanged to the present. *Center photograph – Herbert H. Harwood.*

THE BLACKFRIAR'S BRIDGE, LONDON, ONTARIO

An important survival of 19thC engineering and ironwork in London is the Blackfriar's Bridge over the Thames River N. Branch. Since its construction it has been both a utilitarian and visual asset to the city. Built by the Wrought Iron Bridge Co. of Canton, Ohio, the bridge has been in continuous use – well maintained – since Sept. 1875. By 1950 the bridge appeared to be weakening, but was renovated with minimal change to its original appearance. The bridge, with a clear span



Blackfriar's Bridge, London, Ontario. *John Inksater photograph.*

of 212 ft and low parabolic upper chord, is so graceful it appears to float in the air over the river.

When opened, the present Blackfriar's Bridge was on the route from London to its northwestern suburbs in the County of Middlesex, but the city has so expanded, it is now in the heart of the City. *London Free Press* of 28 Sept 1875 reported that the "structure cost about \$10,000 and over 96,000 lbs of wrought iron have been used in its construction."

The present posted load limit is 5 tons but the following newspaper account of the opening and testing makes it clear that the bridge has held much more.

The bridge was formally inspected by the gentlemen assembled, general satisfaction with its structure and stability being the universal verdict. Thereafter, ten loads of gravel, supplied jointly by the City and County authorities, weighing in the aggregate about 40 tons, was driven on the bridge; but, beyond a slight movement of the upper railwork of the structure and of the planks, the bridge remained firm as a rock. Thereafter the teams drawing the loads were trotted over, and afterwards the loads were drawn over two abreast, with the effect of showing that the bridge was firm and secure, not a movement of the main arches being visible. *continued.*

MISC NOTES

Earlier Blackfriar's bridges had been of wood but had proven unsatisfactory due to their general tendency to decay and inability to withstand the severe spring freshets. General dissatisfaction with wooden bridges led to the decision to erect the present iron bridge, the first in London. The patented design has some resemblance to the very successful Whipple Arch-Truss or Bowstring although WIBCo. made it clear in their literature that they had gone far beyond Whipple.

London's first two iron bridges – the Blackfriar's and the Victoria, both built by WIBCo. and opened in 1875 – were so satisfactory that other wooden bridges soon were replaced. By 1889 London had seven iron bridges and no wooden ones. Except for Blackfriar's most – if not all – of those have since succumbed.

There are always many complex reasons why a structure does or does not survive but one of the main reasons for the survival of the Blackfriar's Bridge is that it is still a useful bridge and happily is so located that there have always been better alternatives for increasing traffic flow than replacing it with a larger structure. Another reason – more difficult to explain – is that although there are no plaques or books drawing attention to the bridge, one senses that the City Engineer's department and many citizens know it is a beautiful bridge, which makes the city a more interesting place to live in. With the completion of a planned extended riverside park system along the Thames more Londoners will come to see and appreciate the graceful profile shown in the photo above; a view one cannot get from a car. *Normal R. Ball, Natl Historic Sites, Ottawa.*

A PLEA FOR HELP: I am continuing research on the Blackfriar's Bridge and the work in Canada of WIBCo, and would appreciate any pertinent information. N.R.B., Box 2859 Station D, Ottawa, Ont, K1P 5W8.

IA TECHNIQUES

"The Architectural Photography of Historic Structures." Intensive, 5-day course in this vital preservation & IA tool, organized by eminent historical architectural photographer Jack E. Boucher [SIA], at Winona School of Photography, Winona Lake, Ind., 16-21 May 1976. Boucher reminds us that while photography is a backbone of preservation and recording, through lack of adequate training in its use, it is grossly mis-used, under-used, and misunderstood. Complete coverage of technique, uses, philosophy, &c. \$200. Details: J.E.B., OAHF, Natl Park Svc, Wash, DC 20240. (202) 523-5474/(609) 653-1776.

Archeological Photography – A series of spring (1976) lectures, seminars & workshops. Basic, advanced, & field photography; architectural photography. Flyer and details: The Maine Photographic Workshops, Rockport, ME 04856.

Preparation of Line Drawings from Photographs. Article by Wm. H. Adams in "Historical Archeology 1974", pp 112-14 (Annual of the Soc for Historical Archeology.)

The Cleaning & Waterproof Coating of Masonry Buildings. "Preservation Brief" by Robert C. Mack, 4 pp. Read & heed all ye who would take the sand blast to your brick or stone structure. Vital stuff here. Gratis: Interagency Hist Arch Svcs Prog, OAHF, Natl Park Svc, Wash, DC 20240.

Surveying. Victor Darnell [SIA] writes: "I've been reading Pannell-Major [*The Techniques of IA*; review SIAN 4:1:8]. One thing seriously lacking in their section on surveys is indicating on fig 21 the beginning of some of their survey lines. This probably makes no sense to a non-surveyor, but I assure you it can lead to some horrible puzzles. Also, some additional check diagonal measurements would strengthen the data in case of an error in measuring or recording. Surplus data is always good."

Engineering Classics Reprinting. Wm. J. Ellenberger [SIA], chairman of an Engineers Joint Council committee for the purpose, requests titles for reprinting as a Bicentennial series, with intention of printing two a year. Each will include a biography of the author and an essay on the impact of the work on the profession. Title, publ data, and a brief summary of the work and its impact to WJE, 6419 Barnaby St NW, Wash, DC 20015.

Louise M. Merritt [SIA], Dir of Historic Albany [N.Y.] Foundation [SIAN 3:5:4] was selected by *Mademoiselle* as one of 7 women to receive their "Mlle" award for outstanding achievement in 1975 for her role in founding HAF and rehabilitation work in Albany.

George M. Notter [SIA Bd] has been elected Pres of the Boston Society of Architects for 1976.

(Very) Small Joke Dept. Recently a R.I. tourism official, his head no doubt filled with visions of Newport, speaking before the state legislature, quipped: "Recently we spent some time in Woonsocket to see if we could find something historic. We couldn't." NB: In the summer of 1968 the HABS-Smithsonian-Merrimack Valley Textile Museum *New England Textile Mill Survey II* measured, photographed, and otherwise documented the Clinton (now gone), and Woonsocket Co. No. 1 & 2 (cotton) mills, the latter now on the Natl Register as a result.

Nomenclature Note: bear in mind that what we will be seeing more and more frequently referred to in the press as "LRVs" (which stands for Light Rail Vehicles), really are TROLLEYS or STREET CARS or TRAMS – whichever way you like it – the new designation presumably a means of covering a natural embarrassment on the part of the transportation industry; an attempt to divert attention from the fact that what they're doing, simply, is bringing back that which they now realize they shouldn't have let slip away in the first place.

Preservation Legislation. *Preservation News*, the Natl Trust's monthly, henceforth will render the extremely valuable service of carrying a listing of current preservation-related federal legislation, both passed and pending, in each issue.

"Patterns of Change in the New England Textile Towns." An honors thesis (U Mich.) by David Margolick [SIA] in two parts: the general history of the industry from Pawtucket & Lowell to the huge complexes at New Bedford & Fall River; and a historical/architectural case study of one mill and company town – N. Grosvenor-Dale, Conn. Unpubl. D.M., 526 Tyndall #B, Los Altos, CA 94022.

Research Material Available: Harry Falconer McLean. C.E. Hyson, a retired engineer, has collected much material on McLean and his construction projects. He was born 1883 in Dakota Terr, U.S.; worked on RR construction in NW U.S.; came to Canada 1906 where as executive or owner of a large construction firm he worked on several projects including portions of the transcontinental and other RRs; hydro schemes; tunnels; roads; &c. He had a hand in practically all major civil engineering works c1900-50 in Canada and some other countries. He was a colorful industrialist, with the typical eccentricities of the self-made man. At many work sites he erected a stone cairn with bronze plaque bearing verses from Kipling's poem "Sons of Martha" in honor of his workmen. Contacts: C.E.H., 118 Saturn Rd, Etobicoke, Ont M9C 2S6 or Paul Stumes, Canadian Engineering Heritage Record, 16th fl, 265 Laurier Ave W, Ottawa, Ont K1A 0H4.

Inquiry: Small Windplants. Information, articles, catalogs, ads, photos, manuals, &c, &c: 1920s-40s sought for chapter on small home/farm wind generating systems in major book on wind power in America. Will borrow and copy your material or pay your copying costs. Prof John Graham, Univ of Colo., Boulder 80302.

EVENTS

Conference on Retrospective Technology Assessment, 4-5 Nov 1976. Proposals for papers solicited; abstracts by 1 June 1976. Prof Joel A. Tarr, Program in Tech & Humanities, Carnegie-Mellon Univ., Pittsburgh, PA 15213. (412) 621-2600.

Old Canal Days Festival. Tours, crafts, &c. Information: OCD, 1109 Garfield St, Lockport, Ill 60441. (815) 838-7316.

Cast Iron Architecture Tours, N.Y.C.: SoHo Distr - lv Broadway & Howard St, 2 May 1976. C-I World of the Astors & Bond St Area - lv B'way & Houston St, 23 May. "Ladies Shopping Mile." - lv B'way & 11th St, 13 June. All tours 2:00, rain/shine, \$2.50.

"The Landscape of Change: Views of Rural New England 1790-1865." Exhibit of 120 paintings depicting 19thC perceptions of the change from an agrarian to an industrial economy, incl many views of industrial communities, by known and unknown artists. Old Sturbridge Village, Sturbridge, Mass., 9 Feb-16 May 1976, 10-4 daily.

George H. Corliss Day: A Centennial of a Centennial. Commemorating the opening of the Centennial International Exposition at Phila., 10 May 1876, and the great 1400 HP double beam-steam engine - the most powerful engine then in America - built for the occasion by G.H.C. to power the machinery in Machinery Hall, the starting of which by Pres Grant & Emperor Dom Pedro II of Brazil signified the fair's official opening. (The engine was purchased by Geo. Pullman in 1880 to drive his new car works; broken up in 1911). The New England Museum of Wireless & Steam, Tillinghast Rd, E. Greenwich, R. I. (401) 884-1710. 9 May 1976, 1:00 PM. A more modest Corliss engine will be started; Wagner's "Centennial March" will be played; and more.

Brooklyn Bridge Drawings. An exhibition of selected design & construction drawings, c1869-80, in ink & wash, many by John A. and Washington A. Roebling - 26 May-5 July. Whitney Museum, Downtown Branch, 55 Water St, N.Y.C.

SIA AFFAIRS

IA. The Journal &c. It is a reality, as many of you have observed, among other comments. The general response has been extremely favorable, and if you have opinions on any aspect of the journal, Editor Emory Kemp would be grateful for them. A mechanical problem already has been noted: a certain imperfection in the so-called "perfect" binding. Pages in some copies have been reported dropping out, to say nothing of the odd case of total disintegration, all due, presumably, to the binder's use of synthetic glues (if God had intended us to use same, he wouldn't have given us the horse). We stand behind our product, though, and if you have had this experience, a note to the *Newsletter* address will bring a new copy. Advise also if your copy hasn't arrived at all.

There seems also to have been some little confusion over the subscription price notice. It should have been noted that *IA* alone (@ \$5 the issue; \$8 per year) is available to libraries *only*. To individuals and other organizations, only the regular membership rate applies: \$15 per year, which brings *SIAN*, *IA*, and all other publications & privileges.

In concluding the 4th Volume of the *SIAN*, I would like to express my thanks to those of you who have supported the cause by "sending along" the vast amount of material - both ready to print and raw data - that forms the *Newsletter's* basis. Traditionally, the former is bylined; the latter not. Two contributors have been extraordinarily active in supplying clippings, reports, and other data for articles and notes. Field Curry, Chairman of the IEEE Pittsburgh Section's History & Heritage Comm and Wilbar M. Hoxie, New England Divn, Corps of Engineers, and Pres of the Middlesex Canal Assn, deserve special mention and have my deepest gratitude. *Ed.*

PUBLICATIONS OF INTEREST

* = Review in *Technology & Culture*, July 1975

Hugh Bodey, **Twenty Centuries of British Industry**. N. Pomfret, VT: David & Charles. 176 pp, illus. \$18.

J.T. Diamond & B.W. Hayward, **Kauri Timber Dams**. Good account of the semi-expendable kauri wood dams built on the fast, narrow small streams of northern N.Z., to build up a sizable pond of water that annually would be released by the tripping of a gate in the dam, providing a great swell of water to carry other Kauri logs to the sawmills, c1850-1940. 36 pp, illus. \$2 PP. Lodestar Press, Box 6154, Wellesley St, Auckland, New Zealand.

Henry Ericsson, **Sixty Years a Builder: the Autobiography of Henry Ericsson**. NY: Arno Press, 1972 (originally publ 1942). 388 pp, illus. \$19.*

Thomas J. Donaghy, **Liverpool & Manchester Ry Operations, 1831-1845**. No. Pomfret, VT: David & Charles, 1972. 212 pp. \$12.*

Anita Engle (ED), **Readings in Glass History**. No. 3. Jerusalem: Phoenix Pubs. 1974. By the ancients; the early origins. 100 pp. \$5.*

Russel I. Fries [SIA], **British Response to the American System: The Case of the Small-Arms Industry after 1850**. In *Technology & Culture*, No. 3 (July) 1975, pp 377-403.

Roger A. S. Hennessey, **Factories**. London: B.T. Batsford, 1969. Intended for "young historians" but valuable, concise account for all. Rise of the factory system from 18thC to present. 96 pp. \$3.

Kenneth Hudson [SIA], **Building Materials** (Vol 9 in Longman IA Series). London: Longman Group, 1972. British orientation but good general review. 122 pp, illus, index, bibl. \$6.

_____ & Ann Nichols, **The Directory of Museums**. London: Macmillan, 1975. 882 pp. Approx \$60.

Richard Hyer & John Zec, **Railroads of New Jersey**. Authors: Box 50, Allenhurst, NJ 07711. 178 pp, illus. \$17; \$14 to libraries.

Robert W. Lesley, **History of the Portland Cement Industry in the U.S.** NY: Arno Press, 1972 (originally publ 1924). 330 pp, illus. \$17.*

Robert F. Marx, **Shipwrecks of the Western Hemisphere; The Lure of Sunken Treasure; The Underwater Dig: An Introduction to Marine Archaeology**. \$11.95; 9.95; 9.95. All illus. David McKay Co, 750 Third Ave, NYC 10017.

Henry C. Mercer, **Ancient Carpenters' Tools**. 5th edn 1975 (1st 1929) with new fwd by Charles F. Hummel. NY: Horizon Press (for Bucks Co Historical Society) 156 5th Ave 10010. 339 pp, index. \$12.95. A classic and still the best basic work on the subject.

Peter Stallard, **History at Source: Men and Machines 1717-1896**. Lond: Evans Bros Ltd., 1973. 55 pp, illus. \$6.50.

Frank N Walker, ed, **Daylight through the Mountain**. Engineering Institute of Canada, Montreal, 1957. Comp of 400 letters between the brothers Walter (1817-99) & Francis (1820-82) Shanly. These Canadian engineers (Hoosac Tunnel) provide a description of pioneer engineering works in Canada, 1836ff. Review: *Newcomen Bulletin*, June 1959.

Derek Wilson, **History at Source: Sail and Steam 1794-1901**. Lond: Evans Bros Ltd., 1973. 38 pp, illus. \$7.

Industrial Archaeology for Schools - Project Technology Handbook 10, 1973. Introduction for teachers & pupils to ways in which IA can be a field of study linking school with community, and humanities with science & technology: organization & approach; relationship to school subjects. English orientation. 44 pp. \$2. Heinemann Educational Books Ltd, 48 Charles St, London W1X 8AH. Also available: **IA of Watermills & Waterpower** (price unk); **Simple Bridge Structures**, 1972, 28 pp, \$1.50.

REGIONAL IA GUIDES & INVENTORIES

Under the energetic leadership of the Historic American Engineering Record [HAER], and the efforts of a variety of other organizations and individuals, a number of these now have appeared, each additional one serving to inspire further others, leading us ultimately to that ideal condition where every state, region, city, and other recognizable area in N America will have had its IA inventoried and the results published in one form or another. HAER has, so far, published inventories of Florida, Oklahoma, Long Island, and New England. To these now are added:

HAER (Thomas Guyder, Dir; Selma Thomas, Ed), Delaware: **An Inventory of Historic Engineering & Industrial Sites.** A listing of sites discovered by HAER/Eleutherian Mills-Hagley Fdn survey. A surprising amount of IA in this little state, although a few sites shown, such as a bank – now a newspaper printery, are questionable. A good piece of work, but which would have profited from nomenclatural review by a technological historian. Avail gratis: HAER, Natl Park Svc, Wash, DC 20240.

HAER (Brent D. Glass [SIA], Dir & Ed), North Carolina: **An Inventory of Historic Engineering & Industrial Sites.** An astonishing number of sites are described – not merely listed – the result of a HAER inventory conducted jointly with the N.C. Divn of Archives & History. Following HAER's new inventory format, started with Delaware (above), the sites & structures are rationally classified, loosely according to HAER's general classification system, into Extractive & Bulk Industries; Mfg & Processing; Power Sources & Prime Movers; Transp; Bridges & Trestles; and Specialized Sites. A splendid introduction on the general development of industry in N.C. provides a useful foundation to a superb, model study. 105 pp, illus by photos, & sketches by Michael Southern. Gratis: as above.

Rainer Slotta, **Technische Denkmäler in der Bundesrepublik Deutschland** [Industrial Monuments in the German Federal Republic]. Bochum: Das Bergbau Museum.

An outstanding effort in cataloguing many of the industrial monuments in W Germany. Slotta, who had only a year to compile this book (to be completed in time for SICCIM), admits that it is far from being a complete list of IA in the GFR. Containing many excellent pictures and chapters on mining, saltworks, quarries, limekilns, foundries, factory warehouse structures, RRs (including mountain), bridges, ferries & river tunnels, canals & locks, hydraulic & water-works installations, gas & waterworks, and mills, each section is preceded by a map and listing indicating the location of the diverse sites. It is a lucid book with a wealth of information. The Director of the Bergbau (Mining) Museum in Bochum, H.G. Conrad, says in the foreword, he hopes that the book will stimulate a positive search for, and more preservation of industrial monuments. *Irmgard Taylor, Membership Co-ordinator, SIA.*

Eberhard Wachtler & Otfried Wagenbreth (Eds), **Technische Denkmale in der DDR** [Industrial Monuments in the German Democratic Republic]. [E] Berlin: Kulturbund der DDR, Zentrale Kommission Natur & Heimat, Zentraler Fachauschuss Denkmalpflege. 149 pp. \$4. Avail: Buch Export, 701 Leipzig, Leninstrasse 16, E Germany.

"The Preservation of Industrial Monuments: The Right and Obligation of the Working Class of the German Democratic Republic." This statement and many others with political overtones seem to be the theme throughout the text, although the book has its merits. We are made aware how much IA belongs in the cultural heritage of a people. Apparently the DDR has been very successful in involving many people from all walks of life – even whole communities – in recording, restoring, and preserving their technical past. *Technische* points out again and again the importance of showing the entire technical development within a site so that today's technology is seen in terms of the creativity of the past.

A chapter on The Development of Illuminating Gasworks & Electric Energy talks about the classic technique of gas production from pit-coal, a technique still being used in some cities, namely Wittstock (built 1858), Frisack & Pritzwalk (1864), and the smallest, but best preserved in its original state, Neustadt/Dosse built in 1898. Several interesting generating stations are described, for example the only existing installation with steam-engine drive (1910), at Bernburg; and the world's first underground power station (1914), at the Dreibrüderschacht (3 Brothers Mine) near Freiberg, with 4 high-pressure turbines.

Industrial monuments of mining & metallurgy are discussed, as are the building materials industry and transportation structures such as bridges, stations, and locks. The conversion of the 10,000-ton *Dresden* (built 1958) into a place for culture and education – especially for youth – is an example of the adaptive use of an industrial monument.

The book holds throughout that most industrial monuments should be kept *in situ*. All the essayists felt that of chief importance in society's preservation of industrial monuments is their use as exhibition sites or in parks. The DDR government has opened quite a few industrial sites and hopes through these, and future, more extensive sites, to educate the public to recognize and take pride in their technical heritage. *I.T.*

LETTERS

Editor:

Relative to the "Marine Notes" on the *Nobska* [SIAN 4:4/5:7], please be advised that the *Nobska* is alive and well in the Port of Baltimore [not Philadelphia] where she is a prominent part of the Inner Harbor scene and will shortly, indeed, be operating as a floating restaurant. The intention is to berth her at the western bulkhead approximately 300 yards from the US frigate *Constellation*. The old ferry is sporting a new coat of paint and the interior modifications are well under way. She is expected to be operational in mid-1976. I will keep you advised. *M. Eamonn McGeady, Baltimore.*

Ed's note: Claire A. Richardson, US Geolog Survey, and several other Balto readers advised of our Nobska gaff. Her transposition to Balto (Nobska's not Richardson's) is not as ageographic as might be supposed, for the 210-ft vessel, late in the Vineyard Sound service (1925-73), is quite like those that in the 1920s plied Chesapeake Bay.

Editor:

Regarding Bloomfield's Welland Canal article [SIAN 4:2/3], in 1962, it was possible, in one area, to view structures from each of canals 1, 2, 3, & 4. Today, these remains are much reduced:

Canal No. 1 – 2 wooden locks are gone.

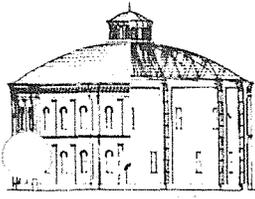
Canal No. 2 – In 1962 its interrelated navigation and water power features were largely intact (but disused); today only a few remnants remain of locks 16-21.

Canal No. 3 – Disused locks 11-23 are much as they were; but ironically, construction of canal No. 5, if on the line most recently proposed, will eliminate most of these.

Canal No. 4 – As mentioned in SIAN, the 8-mile section at Welland already has been bypassed by Canal 5. *Henry H. Baxter, Buffalo.*

Editor:

I noticed in SIAN 4:4/5 reference to the steam tug *Seguin*. She has, in fact, been the property of the Bath Marine Museum since 1969. Due to lack of facilities, she was leased to the Boothbay Schooner Museum for five years but due to continuous deterioration and lack of care was returned to Bath in Sept., 1974. Since then we have been striving to develop a program and funds to undertake her restoration to c1915. Currently volunteers and staff are dismantling and removing the deck houses and machinery preparatory to hauling the hull at Percy & Small Shipyard [SIAN 3:3/4] where all eventually will be restored and rejoined. The *Seguin*, built in 1884, is the oldest steam vessel on the U.S. Register and is on the Natl Register. *Ralph L. Snow, Exec Dir, BMM.*



SYMPOSIUM; History of the American
Wooden Shipbuilding Industry.
Bath Marine Museum, 963 Washington St.
Bath, Maine 04530. 30 April-2 May 1976.

**SOCIETY FOR
INDUSTRIAL
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N E W S L E T T E R

VOLUME FOUR NUMBER 6

E X T R A

NOVEMBER 1975

- TUNKHANNOCK VIADUCT DEDICATION. The American Society of Civil Engineers at 1:30 PM, Sunday 25th April, will dedicate the Viaduct, Nicholson, Penna., a National Historic Civil Engineering Landmark. Arthur Fox, ASCE President and Editor of Engineering News-Record, will present a bronze plaque memorializing the designation to officials of the Erie-Lackawanna Railway.

The Viaduct, built 1912-1915, consists of ten 180-foot arches and two of 100-foot span, with a total length of 2,375 feet. Its height above the bed of Tunkhannock Creek is 242 feet. It is the largest reinforced concrete viaduct in the world.

SIA members are invited to attend the ceremony. (About 10 miles NW of Scranton on US route 11, beyond the N end of the Penna. Turnpike Extension. Note: the Viaduct is in NICHOLSON, not TUNKHANNOCK, which is 13 miles SW.)

- PHOTOGRAPHY SCHOOL. This event, noted in SIAN 4:6, is to be held not in June as stated, but in September, 1976. Details from Jack Boucher.
- POSITION AVAILABLE. M.I.T. Anthropology/Archeology Program seeks archeologist for one-year, junior position, beginning Sept. 1976; specializing in industrial and/or historical archeology of the northeastern U.S.; must also participate in teaching introductory anthropology and archeology; excavation experience required. An equal opportunity/affirmative action employer. Send resume with names of three references to:

Arthur Steinberg
14N 308 M.I.T.
Cambridge, Mass. 02139.