



Society for Industrial Archeology · New England Chapters

Volume 4 Number 1 1984

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Members of the New England Chapters still have the opportunity to register for Industrial Heritage '84, June 8-14, 1984, just before the SIA annual meeting in Boston. This conference is the fifth international conference on the conservation of the industrial heritage. Sponsored by the SIA, the conference is under the auspices of The International Committee on the Conservation of the Industrial Heritage (TICCIH).

The Conference will be a chance for you to meet people professionally involved with IA from all over the world and to share your knowledge of IA in New England with them. Three full days of tours complement three days of working sessions.

Every delegate will be able to participate in a new tour of Lowell and in a two-day excursion to one of three different parts of New England. The day-long Lowell tour, being organized by Chuck Parrott, will highlight the role of local, state and federal agencies in the preservation and interpretation of Lowell's industrial heritage.

The North Coast tour, under the leadership of Larry Gross and Richard Candee, will cover even more territory than the 1982 Fall Tour, visiting a textile plant in Lewiston and mill villages in New Hampshire. The Merrimack Valley tour, directed by Paul Hudon, will include a visit to an operating high-tech plant in a rehabilitated mill as well as water power installations, and textile and paper mills. The Rhode Island and Southeastern Massachusetts tour, organized by Pat Malone, will include tours of jewelry, lace and nail factories, as well as visits to industrial villages in Rhode Island and the great industrial city of

Fall River. In all the tours, participants will have a chance to meet with local planners and developers in forums sponsored by the Massachusetts Department of Environmental Management to discuss the importance of the industrial heritage in economic renewal.

Participants will meet over the course of two days in working sessions to discuss specific topics of importance in IA. Every participant will have the opportunity to make a twenty-minute presentation that will stimulate further discussion.

The Spring-Summer 1983 issue of the SIA Newsletter includes a longer description of the conference. Conference fees cover all of these items:

National Reports, a published volume on the state of IA around the world

Guidebooks for the tours

Abstracts of presentations at working sessions

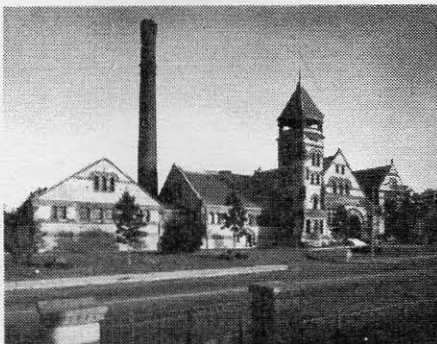
Program and list of participants

Conference Proceedings, a volume of selected papers and summaries of working sessions

Transportation for tours and meetings

All lodging and most meals for six days; includes banquet and receptions, accommodations in Lowell, on excursions and in Boston.

If you want additional information, contact Steve Victor, Conference Coordinator, at 166 East Rock Road, New Haven, CT 06511 (203 789-8223) or Helena Wright, U.S. National Representative to TICCIH, at the National Museum of American History, Room 5703, Smithsonian Institution, Washington, DC 20560 (202 357-2877).



Chestnut Hill High Service Pumping Station of the Boston Water Works, constructed 1889 and enlarged in 1898 by the Metropolitan Water Board. Photo by Jet Lowe for the Historic American Engineering Record.

The Newsletter is jointly sponsored by the Southern and Northern New England Chapters of the Society for Industrial Archeology. This issue was typeset by Paragraphics and printed by Sir Speedy Instant Printing Center, both of Concord, New Hampshire.

PRESIDENTS' REPORTS

PRESIDENT'S REPORT, SNEC

The Southern New England Chapter carried out its traditional spring and fall meetings in 1983. The fall meeting was held in Townsend, Massachusetts on April 23 where the early 19th century Spaulding Grist Mill was toured. This small frame building contains a complete array of late 19th century milling equipment typical of a country custom mill of this period. The fall meeting, in Lawrence, Massachusetts on November 12, featured tours of the new hydroelectric plant built adjacent to the Great Stone Dam of 1843, the South Canal Gate House (1868), and the H&P Spool and Bobbin Co., a fifth generation family-run operation.

Both the spring and fall business meetings featured planning for the SNEC-sponsored 1984 SIA meeting in Boston. In addition to general sponsorship of the SIA meeting, SNEC decided at the fall meeting to fund the kick-off reception of the SIA meeting to which all TICCIIH registrants would also be invited. SNEC also approved a \$1,000 grant to the general planning fund of the TICCIIH meeting.

SNEC was involved in one recording project in 1983 as a contractor to the Massachusetts Historical Commission and the Massachusetts Department of Environmental Management to study and record the last two surviving corporate boarding house units in Lawrence still containing significant portions of their origi-

nal interiors. A 50-page report and six sheets of archival measured drawings were produced. The drawings have been donated to the Historic American Buildings Survey.

SNEC's 1984 activities have been concentrated on the SIA meeting, so no regular chapter meeting is planned until fall. Details on this meeting will be sent to chapter members in due course.

*Charles Parrott
Andover, Massachusetts*

PRESIDENT'S REPORT, NNEC

Being president of the Chapter gives one the opportunity to express ideas to a larger audience, but whether anyone will pay attention is open to question. I should know within a few weeks.

Having given considerable thought to the purpose and role of the Society for Industrial Archeology and its local chapters, I believe that a chapter like ours should serve at least two purposes: 1) sponsoring tours of important industrial sites--both operating and those no longer operating; and 2) sponsoring research and recording projects that document facilities still in use and historical sites out of service.

The first our Chapter has done well, but the second has been done only sporadically. The title of the parent organization conveys the importance of active research, record-

ing, and writing. I believe that the Chapter must be more than a passive, consuming organization. The recording of the Concord Gas-holder indicated the ways in which Chapter research and recording activities enhance our self-image and provide the opportunity for members to share knowledge and skills. The Chapter could, by doing more such projects, aid immeasurably the historic preservation effort and perhaps attract new members.

Another possibility for the Chapter is to indicate to the several state historic preservation offices our willingness to assist in documenting and/or recording important industrial sites, especially those that are endangered. Until the membership indicates a positive response to this idea, I have been reluctant to volunteer our services for fear we could not furnish sufficient numbers of members to comply with such a request.

What is stated above in no way suggests that our tours should be deemphasized, but rather that the Chapter might undertake these other activities, perhaps for a day or two in the summer. Any comments, favorable or unfavorable, on the above ideas are welcome as are other ideas that seek to make the NNEC/SIA a major contributor to the fields of industrial archeology and historic preservation in Maine, New Hampshire, and Vermont.

*William Taylor
Plymouth State College*

1984 SIA CONFERENCE IN BOSTON

For the third time, New England will host the national SIA Conference, to be held in Boston from June 14-17. Hosted and organized by the Southern New England Chapter, the 13th Annual Conference will immediately follow Industrial Heritage '84 (The 5th International Conference on the Conservation of the Industrial Heritage) which winds up in Boston on the 14th. Paper sessions and tours generally will follow patterns familiar to attendees of past annual meetings, but some special experiences are also being planned for the tours and dinner. For example: we'll one up the Redcoats and ap-

proach Charlestown both by land and by sea; we'll enjoy a New England specialty (bring your bib); and we'll not only see the IA of post-industrial Boston but, briefly, take a comparative look at the physical form of the area's re-industrialization. All this plus a special ride on the T, and a visit to one of America's grandest remaining engine halls.

Paper session themes will cover such diverse IA topics as: Urban Systems and Infrastructure; Maritime Industries; Origins, Transfer and Management of Industrial Technology;

Factories and Community Design; Survey Approaches and Techniques; and the Iron Industry. Members of the New England Chapters are especially encouraged to present their work at this national forum in the city that is and was the hub of New England's industrial and engineering development. General information about the conference can be had from Michael Folsom, Charles River Museum of Industry, 154 Moody Street, Waltham, MA 02154.

*Charles Parrott
Andover, Massachusetts*

CURRENT RESEARCH IN NEW ENGLAND

Maine

Crawford Notch:

September 3, 1983 saw the last scheduled freight train over the Maine Central's Mountain Division through Crawford Notch. The line is a segment of the Portland and Ogdensburg and was completed through Crawford Notch to St. Johnsbury, Vt. in 1876. This is one of the most scenic sections of railroad in New England and the Maine Central's heaviest main line grade. Traffic from Portland will be rerouted over the Boston & Maine to the south and west and via Bangor and Mattawamkeag for traffic connecting with the Canadian Pacific.

David Engman
Boston, Massachusetts

New Hampshire

Pisgah State Park:

During the summer of 1983 students at Keene State College surveyed and performed test excavations at the Broad Brook Site inside Pisgah State Park, located southwest of Keene, New Hampshire. In a course co-taught by Faith Harrington and Paula Zitzler, the students helped locate, identify, survey and map features of the 19th century Broad Brook lumbering community: several field stone cellar hole foundations, stone-lined wells, stone dams, holding ponds, streams, ditches, retaining walls, and a submerged wooden turbine box. Test excavations were conducted adjacent to a dwelling house foundation, a blacksmith's refuse area, and in a former sawmill yielding hundreds of mid- to late 19th century domestic and industrial artifacts.

Lumbering operations and a small community of mill workers and lumbermen occupied Broad Brook for about a century beginning in the 1840's or '50's. Documentary, cartographic, and archeological research continues to reveal how Ansel Dickinson, a local entrepreneur, operated his numerous businesses which included the Broad Brook Steam Lum-

ber Mills, the New England Box Company, the Ashuelot Warp Company, and several other partnerships.

Faith Harrington
New Hampshire Historical Society

Sewall's Falls Dam:

Sometime on April 7th or 8th, the world's largest rock crib dam gave way on the Merrimack River in Concord, New Hampshire. Built in 1894, the 633-foot long dam had not been maintained since 1966 when the State of New Hampshire purchased it. The section that was blown out of the dam is nearly 100 feet long, and the State has no plans to rebuild it. The water level in the vicinity of the dam has now dropped by several feet, and upper portions of the timber frame - packed with stones - are now easily visible, affording an unparalleled view of this form of dam construction.

David Starbuck
Rensselaer Polytechnic Institute

Page Belting Company:

The Page Belting Company in Concord, toured by the Northern New England Chapter on October 29, 1983, is easily the largest remaining manufacturer of leather belts in this country. Since the factory was constructed in 1894, it has always been powered by the same Watson Stillman 4-cylinder hydraulic pump which was hooked up to an air-cushioned accumulator. This pump was recently replaced by a new one, and, in response to a request for a

home, the National Museum of American History has agreed to take it. Thanks go to John Hilger, Plant Manager, for being unwilling to see it scraped, and Robert Vogel, NMAH, for being willing to accept it.

David Starbuck
Rensselaer Polytechnic Institute

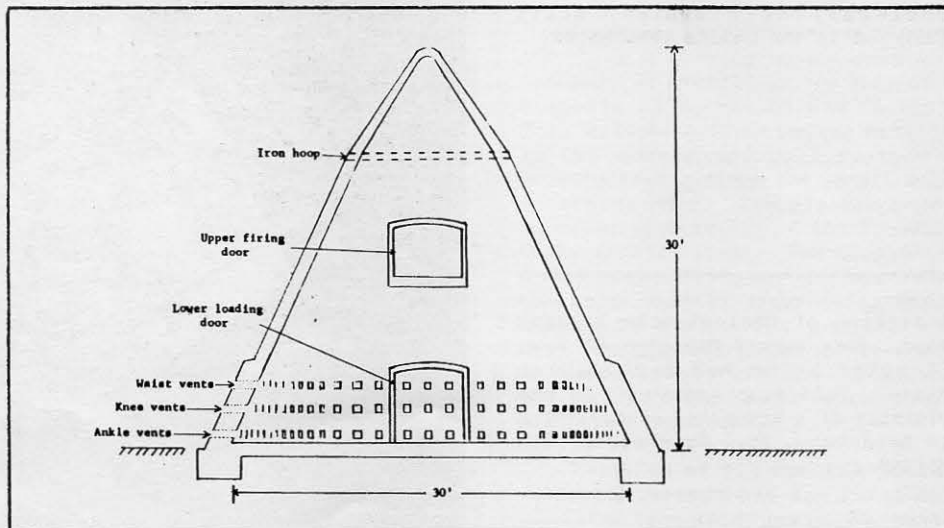
Vermont

Charcoal Kilns:

Field research on charcoal kilns continues in Vermont by Grace and Vic Rolando (SIA) and assisted by Bob West of Rutland, Vermont. Many more kiln sites have been located, from single-kiln sites along the Mad Tom Brook in Peru to an 8-kiln site atop a 2200-foot mountain in Winhall (a 2 mile hike up from the nearest road, on the 4th day of searching). As in 1982, all are within the Green Mountain National Forest, but unlike 1982, variant kiln ruins have been encountered in Readsboro, one of the state's southernmost towns.

Here in September to October were found the remains of a round stone-wall kiln and of at least one brick-constructed conical kiln; two

Design features of conical style charcoal kiln, typical of those located at Readsboro, Vermont. Although of smaller capacity than the circular kilns, they yielded more bushels of charcoal per cord of wood. Courtesy of Vic Rolando.



other kiln ruins were also found in the area. All four were located within a few hundred feet of the town's main north-south highway and in the midst of heavy forest. Three of them (including the stone-wall kiln) appear on an 1869 map, but no further specific documentation has been found on them. The fourth ruin, the conical kiln, was located close to the end of what have now become routine all-day bushwacking exercises in circular patterns about the proximity of already-located sites.

The stone-wall kiln ruin presents more questions than answers. Most puzzling is the lack of evidence for what construction material made up the roof of the kiln. The wall is generally 2 1/2 feet thick and 2 to 3 feet high.

One low, wide gap in the wall may have been the loading door area. The inside diameter is 32 feet, resulting in a 37% larger floor area than the common 28-foot diameter ruins found elsewhere in Vermont. Because the kiln was built into an approximately 15-foot high embankment to facilitate loading cordwood through an upper door, the kiln obviously had some structure above the existing wall; but nothing of this upper structure remains. Test holes inside and outside the kiln failed to expose anything more than a few small pieces of stone and brick chips. If the kiln's upper stone structure had been cannibalized, why was the existing stone wall spared and left the same height all around? If it had been stripped for its bricks, why were so many good bricks so obviously left behind, still inserted in the wall's vent holes?

The only known stone-built charcoal kilns in this area are two conical-shaped kilns still standing in Dutchess County, New York, at Wassaic. These were inspected and found to be built of 2-inch thick stone slaps, their 3-foot thick walls rising upward and inward immediately from ground level. The Readsboro stone-wall kiln is made of 6 to 10 inch diameter/diagonal stones, and the wall rises vertically with no evidence of a conical configuration.

The remains of the confirmed conical charcoal kiln were located about a mile away from the stone-wall site, beneath a foot of scattered brick, dirt, and charcoal. A foot-wide section of wall was excavated to a depth of about 2 feet, exposing seven tiers of brick on a stone block foundation. One vent hole at the base is also in this section of wall. Each tier is mortared and set inward about 1/2 to 3/4 inch; stretchers line the outside face and headers the inside face, creating an approximate 1-foot thick wall. The inside diameter to the opposite side (also partially excavated and checked) is 30 1/2 feet.

While reinspecting the other two kiln ruins in the vicinity, Grace found an iron door at one ruin which matches ca. 1880 sketches of conical kiln doors. A limited excavation near the spot of the door find, through 2 feet of randomly scattered brick, exposed a section of circular-laid foundation stones and the burnt pitch floor of the kiln, but no intact section of wall was found.

Also during the summer of '83, the long-sought site of Nathaniel Chipman's ca. 1790 forge/furnace in Tinmouth may have been found. This site has Ira Allen connections (Ira was Ethan's brother, a builder of many early forges in Vermont, and founder of UVM). Much heavy, black slag was found near the barest remains of a dam crib; and along the upper reaches of the Little Otter Creek in Ferrisburg (northeast of Vergennes), another elusive blast furnace site has been found. This may have been the forge bought out by the Monkton Iron Company in 1809 to make way for the construction of their main ironworks at Vergennes. This ironwork played a major part in the construction of MacDonough's fleet that went on to defeat the British at the Battle of Plattsburg in 1814.

*Vic Rolando
Pittsfield, Massachusetts*

A section of conical kiln loading door. Note curved top edge of door. Circular kilns had rectangular doors. This door was found in the vicinity of a suspected conical kiln in Readsboro, Vt. Courtesy of Vic Rolando.



Massachusetts

Boott Cotton Mills Recorded By HAER

During the summer of 1983 the Historic American Engineering Record (National Park Service) undertook the first phase of a planned two-summer recording project of the Boott Cotton Mills in Lowell, Massachusetts. Cosponsored by the Lowell National Historical Park (National Park Service) and the City of Lowell, Mills 1, 2, 8, and 9 were measured and drawn by a five-member team of pen-wielding architectural students under the direction of Richard K. Anderson, Jr., HAER Staff Architect (and SIA member).

Team members included Deborah M. Hurst (Washington University) who was field team supervisor, Donald C. Hartley (University of Utah), Michael Monaldo (University of Maryland), Pamela S. Pendergrass (University of Tennessee) and Howard Lee Thompson (Texas Tech University). Working out of their office in the Boott Mills Counting House, they produced 30 drawings consisting of

plans, elevations, sections, and architectural and structural details.

HAER hopes to record the remaining mills (5, 7, and 9 North) under the same cosponsors in 1984 and produce an in-depth historical report on the complex's history, development and significance in addition to the measured drawings. The documentation will probably be supplemented by additional large-format photographs to be taken by Jet Lowe, HAER's much-travelled Staff Photographer. The Boott Mills project is the second HAER project to be run in Lowell--the first one documented the city's system of locks and canals in 1973-74.

Richard K. Anderson, Jr.
Staff Architect
Historic American Engineering
Board Record

Blackstone Canal:

The National Park Service, in cooperation with the Massachusetts Department of Environmental Management (DEM) and the Rhode Island DEM, are proceeding with research, planning, and implementation of a proposed park along the Blackstone Canal between Providence, R.I. and Worcester, Mass. In Massachusetts, DEM is going ahead with acquisition and planning for a visitors' center at the Voss Farm in Uxbridge; restoration of the towpath between the

Stanley Woolen Mills in Uxbridge and Rice City Pond on the Northbridge-Uxbridge line; reconstruction of a lock below Rice City Pond; and construction of a canal boat for eventual public use on the restored section of canal. The plan also includes a bike/hike path to be constructed between Grafton, Mass. and Providence, R.I. In Worcester, research of the former canal route, now largely obscured by later development and construction, is being undertaken by historians Claire Dempsey and Myron Stachiw, and historical geographer Michael Steinitz. They are also preparing a report on the social and economic development of the city of Worcester as a preliminary stage in the planning of a potential State Heritage Park in that City.

In Rhode Island, Dempsey, Stachiw, and Steinitz are researching the route of the Blackstone Canal and the social, cultural and economic development of the Blackstone Valley towns. The survey will compile the relevant cartographic and documentary materials, and identify extant structures and visible archaeological remains along the canal and river as well as surviving canal features. Recommendations will be made regarding potential interpretive themes and sites, as well as suggesting a route for the bike/hike path which will result in minimum impacts and maximum interpretive uses.

Myron Stachiw
Massachusetts Historical Commission

Old Sturbridge Village:

Old Sturbridge Village is reconstructing a working up-and-down water-powered sawmill on the site of a historic mill that burned in 1802. This will be a functioning exhibit in the museum and will feature a primary sawing floor and an ell with a turning shop. The plan is based on measured drawings of the Nichols-Colby Sawmill in Bow, New Hampshire, which was destroyed in the 1938 hurricane shortly after being documented by HAER. The project has been under the direction of Theodore Z. Penn, Industrial Archeologist, and formerly the technological historian for the museum.

The site of the reconstruction is in the museum and was first exploited for waterpower by David

Boott Cotton Mills. Sheet 1.
Courtesy of Historic American Engineering Record, National Park Service. Delineated by Richard K. Anderson, Jr., 1983.

BOOTT COTTON MILLS

LOWELL, MASSACHUSETTS

1835 - c.1880

REGION



BASED ON MAP IN BANCROFTIAN
BOOTH COTTON MILLS, 1835 - c.1880
LOWELL, MASSACHUSETTS

BOOTT COTTON MILLS IS ONE OF THE OLDEST SURVIVING LARGE TEXTILE COMPLEXES IN THE UNITED STATES. IT IS LOCATED BETWEEN THE EASTERN CANAL AND THE MERRIMACK RIVER IN LOWELL, MASSACHUSETTS, AND EVER SINCE ITS FOUNDING IN 1835, THE COMPLEX HAS UTILIZED THE WATERPOWER GENERATED BY THE SEVENTEEN FOOT DROP IN ELEVATION BETWEEN THESE TWO WATERWAYS. THE BOOTT MILLS BUILDINGS ARE PRODUCTS OF THE EARLIEST LARGE-SCALE INDUSTRIAL PLANNING PROJECT IN AMERICA AND WERE DEVELOPED BY THE SAME GROUP OF PROMINENT AND INNOVATIVE INDUSTRIALISTS THAT FOUNDED THE CITY OF LOWELL. AMONG THESE MEN WAS LOWELL'S MOST NOTEWORTHY MILL AGENT, KIRK BOOTT. IMPORTANT STEPS IN THE GROWTH OF AMERICAN INDUSTRY, TECHNOLOGY, WATER POWER GENERATION, AND SCIENTIFIC MANAGEMENT CAN BE TRACED THROUGH THE EVOLUTION OF THE MID- AND LATE-NINETEENTH CENTURY STRUCTURES AT BOOTT MILLS.

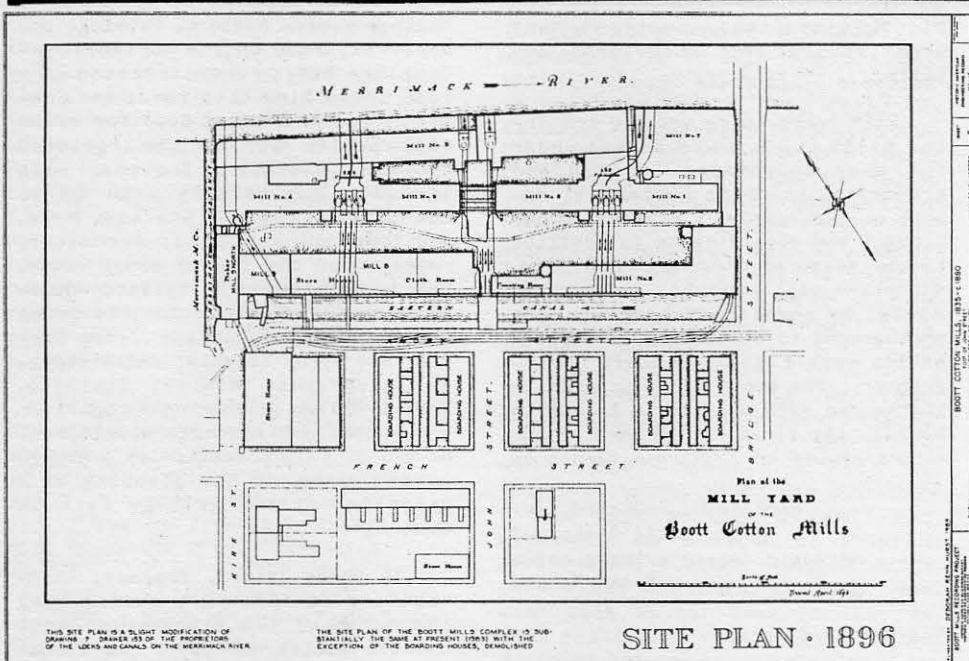


THIS RECORDING PROJECT IS PART OF THE HISTORIC AMERICAN ENGINEERING RECORD (HAER) A LONG-RANGE PROGRAM TO DOCUMENT HISTORICALLY SIGNIFICANT ENGINEERING AND INDUSTRIAL WORKS IN THE UNITED STATES. THE HAER PROGRAM



IS ADMINISTERED BY THE NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR. THE BOOTT MILLS RECORDING PROJECT WAS COSPONSORED DURING THE SUMMER OF 1983 BY HAER UNDER THE GENERAL DIRECTION OF ROBERT J. KAPSCHE, CHIEF, AND BY LOWELL NATIONAL HISTORICAL PARK, THE CITY OF LOWELL, AND BOOTT COTTON MILLS.

THE FIELD WORK AND MEASURED DRAWINGS WERE PREPARED UNDER THE DIRECTION OF RICHARD K. ANDERSON, JR., HAER STAFF ARCHITECT, WASHINGTON, DC. THE RECORDING TEAM CONSISTED OF DEBORAH M. HURST (WASHINGTON UNIVERSITY), ARCHITECTURAL SUPERVISOR, DONALD C. HARTLEY (UNIVERSITY OF UTAH), MICHAEL MONALDO (UNIVERSITY OF MARYLAND), PAMELA S. PENDERGRASS (UNIVERSITY OF TENNESSEE), AND HOWARD LEE THOMPSON (TEXAS TECH UNIVERSITY). ARCHITECTURAL DELINEATORS: JONAS PHOTOGRAPHY WAS DONE BY JET LOWE, HAER STAFF PHOTOGRAPHER, IN 1982.



SITE PLAN - 1896

Boott Cotton Mills. Sheet 2. Courtesy of Historic American Engineering Record, National Park Service. Delineated by Deborah Rehn Hurst, 1983.

Wight, one of the early settlers in Sturbridge, in the late 18th century. Research and excavation at the site has been led by John Worrell, director of research at the Village. It has produced a fascinating array of information regarding the ingenious conversion by Wight and his successive heirs of a useless swamp into a facile and convenient waterpower site which eventually accommodated both saw- and grist-mills throughout the 19th century. Information ranges from sawing artifacts sealed in the 1802 destruction layer through evidences of the engineering and massive topographic alterations by which some unusual geological features were transformed into canals, dikes, wharves and raceways.

Industrial Archeology at Hancock Shaker Village:

The summer field season of 1983 marked the beginning of a joint research effort between Hancock Shaker Village (Hancock, Massachusetts) and the Public Archaeology Program at Rensselaer Polytechnic Institute (Troy, New York). The effort was co-ordinated by Jerry Grant, Direc-

tor of HSV, and Dr. David Starbuck, Program Director at RPI, and was concentrated on the industrially-oriented North Family of the Shaker community. The field crew, composed of RPI graduate students, local residents, and HSV staff, spent 6 weeks mapping and excavating details of the 19th-century waterpowered mill system. The North Family complex consists of the remains of a sawmill, carding mill, a residence, 2 stone dams, roads, bridges, wells and other features situated along Shaker Brook, immediately north of the museum village. Documentary research is continuing, and planning is now underway for fieldwork in the summer of 1984, to be directed by Paula Zitzler and Owen Keatley, both of Rensselaer Polytechnic Institute.

The long-range goals of the archeological research at HSV are to illuminate details of 19th century Shaker industry and technology, and to expand the interpretation of the present museum village to include these aspects of Shaker communal life.

Paula Zitzler
Rensselaer Polytechnic Institute

Boott Cotton Mills. Sheet 15. Courtesy of Historic American Engineering Record, National Park Service. Delineated by Pamela Pendergrass, Deborah Rehn Hurst and Richard K. Anderson Jr.

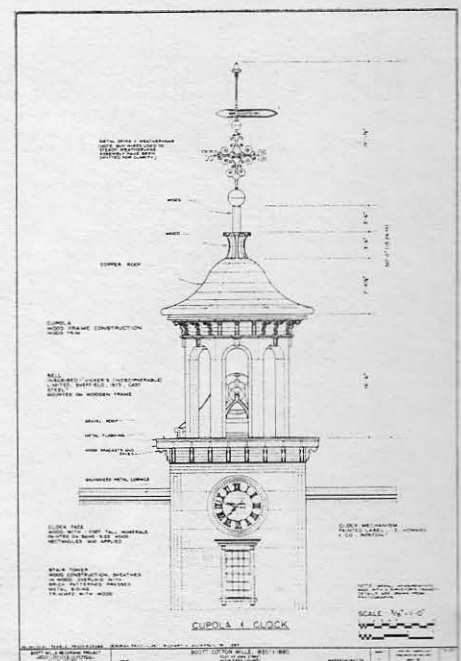
Massachusetts Historical Commission:

In November 1983, MHC's state-wide Reconnaissance Survey (see SNEC-SIA Newsletter, Vol. 1:2, October 1980) entered its fourth year of existence. The four-member survey team consisting of Michael Steinitz (cultural geographer), Myron Stachiw (industrial historian), Claire Dempsey (historic archeologist), and Charlotte Worsham (architectural historian), has now completed work on the 60 towns and cities of Worcester County. Work on the "Cape and the Islands" -- the 23 towns of Barnstable, Dukes, and Nantucket counties -- is now underway.

MDC and MBTA Surveys:

One of the early results of the Reconnaissance Survey was a recommendation for comprehensive system-wide surveys of the engineering structures of the Metropolitan District Commission (MDC) and the Mass. Bay Transportation Authority (MBTA).

The Metropolitan Water Board (merged into the MDC in 1919) was formed in 1895, taking over most of the facilities of the old Boston Water Works, as well as the facilities of 12 other towns and cities in the Boston area. Today, the MDC Water Division supplies 34 communities, with significant historic-period structures in many of them. With a grant from the Massachusetts

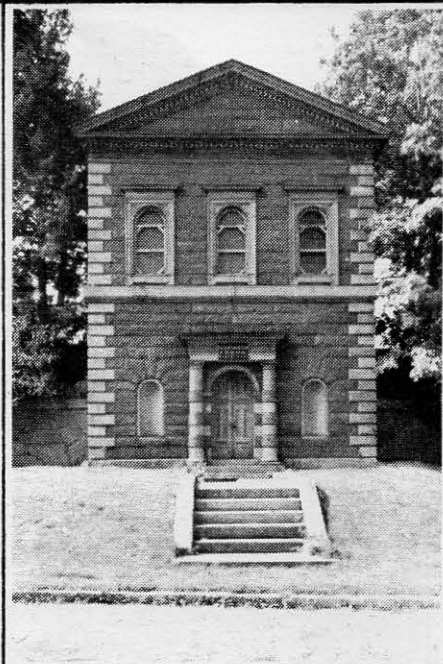


Historical Commission, the MDC is shortly expected to begin the first comprehensive survey of these (pre-Quabbin) structures, preparatory to a thematic nomination to the National Register of Historic Places.

The MBTA traces its origins back to 1894 and the establishment of the Boston Transit Commission, organized initially to build the Tremont Street Subway, already a National Historic Landmark. Today, however, properties of the "T" also include some of the earliest structures associated with the electrification of the West End Street Railway, the nation's first large electric streetcar network, begun in 1889. The MBTA survey, also culminating in a National Register nomination, is due to be completed in August 1984.

New Federal Jobs Bill Funds Restoration of Nantucket Windmill:

The first development grants to be awarded since 1981 were announced last July. The new Federal Jobs Bill, signed by President Reagan in March of 1983, allocated \$25 million for historic preservation projects; of this amount, Massachusetts has received \$640,000. Over 200 applicants applied for these funds, with requests totaling \$8 million. Twenty projects were selected for funding, including the Nantucket Historical Association's Old Windmill, a 1746 smock mill built by Nathan Wilbur on Mill Hill in Nantucket. Now a National Historic Landmark,



1848 Granite Gatehouse at the Receiving Reservoir (Brookline) on Boston's Cochituate Aqueduct -- one of the many structures to be studied in the MDC Survey. Photo by Jet Lowe for the Historic American Engineering Record.

Excavation of the Wheelpit of the Carding Mill at Hancock Shaker Village. Courtesy of David Starbuck.



the mill continues to operate each summer grinding corn for visitors. Insect infestation and continued wear have weakened portions of the octagonal oak frame. A \$15,000 matching grant from MHC to the Nantucket Historical Association will provide for fumigation of the building and epoxy reinforcement/consolidation of the damaged members.

Recent Massachusetts Listings in the National Register:

Arthur A. Smith Covered Bridge, Colrain (2/3/1983). One of four historic-period covered bridges surviving in Massachusetts, the AAS Covered Bridge was originally built in 1870 at Shattuckville, a small mill village in the town of Colrain. In 1896 the bridge was moved to its present location a few miles up river in Lyonsville, where it was renamed after a prominent town official. Laminated wooden arches were added to the 100-foot Burr truss in 1920, to support the heavier loads of a local cider mill.

Concord Square Historic District, Framingham (2/10/1983). The new historic district in South Framingham includes one of the few surviving examples of a straw-bonnet shop left in the state. Built for Curtis Barber about 1873, the two-story, mansard-roofed frame factory employed as many as 400 women in the busy season. In 1920's, Wallace Nutting used the building to manufacture his popular furniture reproductions.

Fall River Multiple Resource Area (2/16/1983). Thirty-two separate mill complexes ranging in date from c.1840 to 1920 are included in this multiple resource nomination prepared by the Fall River Office of Historic Preservation. In the years immediately following the Civil War, the granite cotton mills, with which the city is identified, made Fall River the pre-eminent textile city in America.

Hopkinton Supply Company Building (3/10/1983). This small one-story commercial building retains an immaculately restored 1906 "mail order" storefront constructed of pressed sheet metal by the George L. Mesker Company of Evansville, Indiana.

Of the 27 structures built by the company in Massachusetts by 1910, this is the only known example to survive.

Annisquam Bridge, Gloucester (6/23/1983). A 440-foot wood-pile bridge built in 1861 by the Town of Gloucester to link Annisquam village and the center of Gloucester. Now closed to all but pedestrian traffic, the bridge is one of only two known long-span wood-pile bridges in the state.

Ames Manufacturing Company, Chicopee (6/23/1983). This complex of 19 interconnected buildings was constructed in stages between 1847 and 1915. Although the firm produced swords, edge tools, and later bronze statuary, its chief fame after 1845 was as a manufacturer of textile and other machinery. Ames became one of the first firms in the U.S. to manufacture and market a standard line of machine tools to the general public.

Newspaper Row, Boston (7/7/1983). The designation of Newspaper Row, two Milk Street newspaper offices, places on the National Register another of Boston's six cast-iron facades. Designed by the Boston firm of Peabody & Stearns, the Boston Post Building (1874) is the only one of the six for which a foundry has been identified: New York City's celebrated Architectural Iron Works, founded by Daniel Badger who started his career in cast-iron architecture in Boston in 1842.

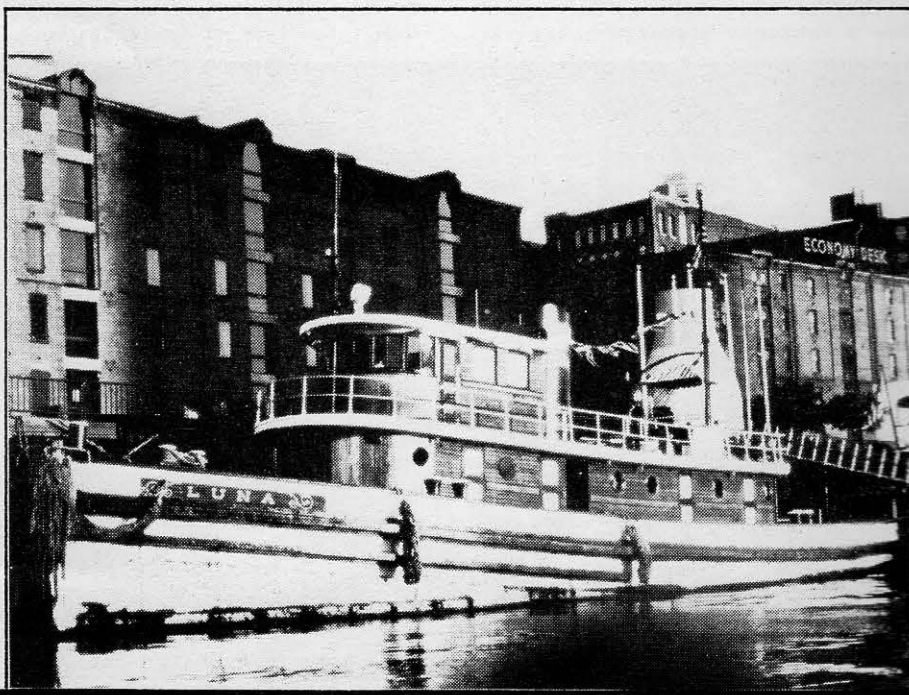
Heywood-Wakefield Company Complex, Gardner (9/15/1983). The Heywood Brothers Company, later Heywood-Wakefield, dominated the Gardner chair-making industry from the mid 19th century until the factory closed in 1978. The twenty-five-building factory complex was constructed between 1816 and 1945, though most of the brick structures date to the period 1880-1910. After the merger of Heywood Brothers and Wakefield Rattan in 1897, the firm became the world's largest manufacturer of cane and reed products, matting, baby carriages, and chairs. The company still retains administrative offices in Gardner.



Flat-iron Building (1893 in the Heywood-Wakefield Company Complex, Gardner. Photo by Windsor Robinson for the Gardner Historical Commission.

Tugboat Luna, Boston Harbor (10/6/1983). When she was launched in 1930, the "Luna" was the first commercial tugboat to utilize diesel-electric propulsion, the latest "state-of-the-art" method of varying the transmis-

Tugboat Luna in Fort Point Channel, Boston, July 4, 1982. Museum wharf buildings and Hood "Milk bottle" restaurant in background. Photo by Carolyn Royal.



sion ratio to the propeller. Designed by the Boston naval architects, John G. Alden Company, the "Luna" was also one of the last wooden-hulled tugboats constructed. Today she is the only original diesel-electric tugboat still running in the U.S. Retired in 1971, the tug has been under restoration since 1979 for use as a living museum.

Tantiusques Reservation, Sturbridge (10/6/1983). A graphite, or black lead, deposit known originally as Tantiusques is thought to represent the oldest mining operation in New England. The Sturbridge lead mine was worked intermittently for over 2-1/2 centuries beginning as early as 1658. Major features of Tantiusques, now owned by the Trustees of Reservations, included a 750-foot open cut, and a 50-yard tunnel intersecting a graphite vein.

Boston-Area Inventory:

The three-county inventory of historic industrial and engineering structures has been in progress since 1982 in preparation for the SIA's 1984 Boston conference. MIT Press will publish a preliminary edition, for Boston Proper, in time for the June conference. This will be supplemented by additional material on other sites to be visited on the various tours. The expected publication date for the complete work, covering approximately 1,000 sites in Middlesex, Norfolk, and Suffolk counties, is now anticipated to be the summer of 1985.

The Massachusetts Historic Commission, the key sponsor of what has been in large part an outgrowth of the Reconnaissance Survey, has also been the project's principal financial benefactor. Important financial and research support has also come from the Charles River Museum of Industry, together with smaller grants from the Polaroid Foundation and H.P. Hood, Inc. The Historic American Engineering Record, through staff photographer Jet Lowe, has supplied large-format record photographs for many of the structures in the three-county area. Local SIA members, colleagues, and historical commissions have also given generously of their time.

Peter Stott
Massachusetts Historical Commission

Connecticut

Archeology at Mine Hill:

The iron and steel works at Mine Hill, Roxbury Station, Connecticut is historically significant as the first integrated steelworks in America. It was one of the many steel-making enterprises started just at the end of the Civil War as American iron masters attempted to meet local demand before the technology of large-scale steel production was well understood. Commercial-scale experiments with the Bessemer and crucible processes and, at Mine Hill, with puddled-steel were undertaken. The technical difficulties with the latter were never mastered at the Mine Hill works; the reasons for this will only be found by archeological investigation.

The Mine Hill site is now owned by the Roxbury Land Trust, who are taking in hand the preservation and restoration of the blast furnace of the steelworks. This is probably the only surviving blast furnace stack in New England to have its internal structure still complete and largely undamaged. However, the sand packing between the brickwork of the stack and its stone casing is beginning to collapse because of deterioration of the brickwork in one arch. An archeological survey of the furnace is being undertaken preparatory to stabilization work on the structure. The now visible interior and the furnace top are being photographed and measured. Debris in the casting arch is being removed and enough of the casting floor excavated to show the arrangements for handling the molten metal and slag. Samples of slags and refractories for laboratory analysis are being taken, and a plan for excavation of the rest of the site is being developed. This archeological study is being done by Michael Raber and Robert Gordon.

Robert B. Gordon
Yale University

Industrial Archeology at Yale:

A course called Archaeometallurgy and Industrial Archaeology is now being given by Robert Gordon at Yale for advanced undergraduates and for graduate students in the archeology program. This course takes a broad view of industrial archeology - the material evidence of man's experience with technology from the earliest times - but is focused on metallurgy. Both laboratory methods and field works are included. The field work is being done at the Mine Hill steelworks site now owned by the Roxbury (Connecticut) Land Trust.

Students in the course of archeological field methods have been excavating the grounds of the Glebe House in Woodbury, Connecticut. They have uncovered evidence of a shop specializing in the manufacture of jewelry in the nineteenth century. Laboratory analysis of metal artifacts and crucibles recovered from the site is in progress.

A number of students have entered the new Master's degree program in archeology. One, Jack Rutledge, is writing a Master's thesis on metalworking technology of the Inca at Machu Picchu, Peru.

Robert B. Gordon
Yale University

Phoenixville:

As part of its ongoing research into the world of the early 19th century, rural, New England craftsman, Old Sturbridge Village sponsored a second season of excavations this past summer at an 1820's-30's craft neighborhood in the north-eastern Connecticut village of Phoenixville. John Worrell (Old Sturbridge Village) and David Simmons (University of Pennsylvania) directed students participating in the 5th OSV Field School in Historical Archaeology, along with a crew of regular, volunteer archeologists, in the excavation of three sites in the Sprague Hill neighborhood: the Sprague blacksmith shop, in operation by 1822 and defunct by 1836; and two house sites-- the Gurley-Taylor house, built on speculation during the early 1820's and the Wilcox/Simmons house, constructed during the early 1830's as part of the expanding craft complex. Both

of these very modest houses were first the homes of blacksmiths working in the neighborhood, and then of relatively poor, single women. A large area of the blacksmith shop floor was excavated, yielding considerable functional information on shop workspace, especially with regard to the primary blacksmithing area, storage of fuel in the "coal" (charcoal) house, and the immediate source of water, as well as information on shop production. Work at the Gurley/Taylor house focused upon a large, dressed stone, subterranean feature, probably a root cellar, which was completely excavated. Measuring about 12 feet square by slightly over 5 feet in height, the cellar abutted the front wall of the house, extending under the front yard terrace; it would have been entered from the lower floor of the house through an opening in the front foundation. The cellar was designed to be capped with four or five stones of varying width, of which only one remained *in situ*. They were over 14 feet long and were sealed with lime cement caulking. Either during its construction or early in its use, several of the cellar's cap stones broke, collapsing onto the floor. The cellar was abandoned and filled with cobbles and boulders. Excavations at the Wilcox/Simmons house site revealed much information on the siting and construction of the house and on refuse disposal patterns about the yard. Excavations will continue at all three sites this summer and fall, and material culture analysis will take place this winter in the Old Sturbridge Village archeology lab.

David Simmons
Old Sturbridge Village

RECENT PUBLICATIONS

Carlson, Barbara. 1983. Tax Credits Spurring Renovation of Mills for High Technology. *New England Business*, July 4, pp. 25-26.

Catalogue Three: *Victoria's Orb, 1837-1901*. A Catalogue of 19th-century books, pamphlets, and trade catalogues relating to industry and technology. Available for \$1.00 (to cover postage) from Bo & Co., P. O. Box 162, Pomfret, CT 06258.

Chestney, Linda. 1983. Down by the Old Mill Stream. *Business NH*, Nov-Dec, pp. 50-54. (Describes the still-functioning Cheney sawmill in Kingston, NH.)

Grimes, Leonard R., and John E. Corey. 1982 Historic Standpipe a Functional Beauty. *Water/Engineering & Management*, Dec., pp. 31-32. (Describes the Tower Hill water storage standpipe in Lawrence, MA.)

O'Donnell, James D. 1982. Transforming a Textile Mill from an Outmoded Complex... to an Efficient Industrial Park. *CEE*, Oct., pp. 67.

Woodman, Betsy H. 1983. Gathering the Salt Hay: A Measure of Man and Marsh. in *Antiques Show*, The Newburyport Maritime Society, pp. 3439.

Woodman, Betsy H. 1983. Salt Hay-ing, Farming and Fishing in Salisbury, Massachusetts: The Life of Sherb Eaton (1900-1982). *Essex Institute Historical Collections*, July 1983.

HISTORICAL SOCIETY WINS FEDERAL GRANT FOR 1984 NEW HAMPSHIRE TOOL EXHIBIT

The National Endowment for the Humanities has awarded a \$22,900 grant to the New Hampshire Historical Society (Concord, N.H.) in support of a 1984 exhibition of New Hampshire-made tools and the effect 19th-century industrialization had on the state's traditional tool-making crafts.

The NEH grant to the Historical Society was one of four the federal agency awarded in New Hampshire in its second quarterly funding cycle. The grant will support an illustrated catalogue and gallery guide, craft demonstrations, and gallery tours during the fall, 1984, tool exhibit.

According to NHHS Curator Jim Garvin, the focus of the catalogue will be on the little-studied impact of the Industrial Revolution in America on traditional trades and on the process of hand production of hand tools.

The exhibition and the catalogue will try to broaden the preoccupation of antique tool collectors with functions and aesthetics by taking into account the historical forces that permitted or necessitated tool manufacture. Industrialization in New Hampshire will be seen to have been attended by an increased production and refinement of handcraft tools.

The tool exhibit, which will open September of 1984, will include several hundred hand tools from institutional and private collections. The tools will be grouped by trades and will be accompanied by products of these trades. The catalogue will include an essay which will analyze the inventiveness, commercial success, and design of the tools. It will also feature illustrations of some 150 tools and a listing of New Hampshire hand tool makers. The Society would appreciate any information on the state's tools and tool makers.

Preparation and installation of the New Hampshire tools and tool-makers exhibit has also been supported by a grant from the Early Industries Association -- a national organization of students and collectors of antique tools. Additional support for the exhibition is expected from New Hampshire individuals, foundations and businesses.

The NHHS tool exhibit will run through December of 1984 and will feature demonstrations by New Hampshire craftspeople in various trades with concentrations in woodworking, metalworking, and leatherworking. It will also be supported by a grant from the Carter Foundation of New Hampshire.

NEW MEMBERS SOUGHT

Both the Southern and Northern New England Chapters are eager to accept new members! If you would like to join and receive the Newsletter, please fill out the membership application on the back page and send it in.

MEETINGS AND ANNOUNCEMENTS

Industrial Heritage '84:
June 8-14, 1984. (See page 1 of
this issue).

SIA 13th Annual Conference:
June 14-17, 1984. (See page 2 of
this issue).

Lowell Conference on Industrial His-
tory: The Lowell Conference on
Industrial History will hold its
fifth annual meeting on June 7-8,
1984 at the University of Lowell.
In keeping with the spirit of Indus-
trial Heritage '84, which follows
the Lowell Conference immediately,
the theme of the Lowell Conference
will be "The World of the Industrial
Revolution: Comparative and Inter-
national Aspects of Industrializa-
tion." Individual sessions will
focus on labor, the economy, machine
technology, power generation, and
the industrial city--all in an in-
ternational context. Speakers thus
far include David Brody, Terry Rey-
nolds, Richard Hills, David Gold-
field, and others. SIA and TICCIH
members are encouraged to attend.
Registration fees will be \$35.00, a
figure which includes meals and
refreshments. For further informa-
tion, write to Lowell Conference on
Industrial History, Lowell National
Historical Park, 169 Merrimack
Street, Lowell, MA 01852; or phone
(617) 459-1027.

Robert Weible
Lowell National Historical Park

Merrimack Valley Textile Museum: An
exhibit entitled "Just New from the
Mills: Printed Cottons in Victorian
America" opened on January 10 and
will run through November 25, 1984.
This exhibit draws on MVTM's collec-
tion of more than 10,000 printed
cotton samples from the Cocheco
Print Works in Dover, New Hampshire,
and the samples were manufactured
between 1880 and 1890. For informa-
tion, call (617) 686-0191.

Old Sturbridge Village: The sixth
OSV Field School in Historical
Archaeology will be conducted from
June 25-August 10, 1984 at Old Stur-
bridge Village and at the Emerson
Bixby Site in Barre, MA.. After a
week of intensive orientation to the
historical and material culture of
early 19th century New England,
students will spend six weeks learn-
ing the methods and techniques of

field archeology, working at the
home and shop site of an early 19th
century blacksmith and farmer, Emer-
son Bixby. This is the first season
of a projected three-year project to
develop new historical information
for exhibits and interpretation at
Old Sturbridge Village. The Field
School will involve students in
excavation, survey, measured draw-
ing, conservation, and other field,
lab and recording activities. Lec-
tures, workshops, and informal semi-
nars will complement the work in
field and lab. The Field School has
been constructed as the equivalent
of a two-semester course at either
the graduate or undergraduate level,
with optional credit available
through Clark University in Wor-
cester, MA for \$100. A program fee
of \$475 covers all materials and
fees and includes complimentary ad-
mission to Old Sturbridge Village
during the program. Local room and
board for the duration of the Field
School will also be available for an
additional fee. Participation will
be limited to 20 students. Applica-
tions will be processed as received.
For further information and applica-
tion forms, contact: David Simmons,
Archaeology Field School, Old Stur-
bridge Village, Sturbridge, Mass.
01566.

North Kingstown Free Library: The
North Kingstown Free Library in
North Kingstown, R.I. has recently
received a set of 29 ledgers and
account books from two small woolen
mills in Davisville, R.I. known at
the Ezra Davis Mill and the Davis
and Reynolds Mill. The collection,
donated by a descendant of the Davis
family, ranges in date from 1811 to
1871 and includes company store
inventories and accounts with mill
employees and community members;
records and accounts of yarn "put
out" for weaving; a pattern book
with plaid patterns and two swatches
of colorful plaid cloth, possibly
from the 1830s; and records from the
village post office between 1854 and
1871. During the 1840s and 1850s
the mills also produced Kentucky
jeans, a type of mixed cotton and
woolen cloth commonly sold in the
South for slave wear and in the
West. The ledgers and account books
are available for research at the
North Kingstown Free Library during
regular library hours. Contact Mrs.
Susan Berman, director of reference,
at (401) 294-3306.

HELP WANTED

The following equipment is
available to a suitable home on the
basis of a "Gift to a Charitable
Institution:"

From Norton Company:

1 - Yale differential chain
hoist, 30 ton capacity; operates
with 2 chain driven hoist
wheels; large, heavy unit -
hoists very slowly.

1 - Norton double spindle,
floor stand grinder; Type S, for
20 inch wheels.

From Philip L. Platt:

1 - J. G. Blount, floor stand
grinder, single spindle, 20 inch
wheel; originally built for wet
grinding; Serial #1123; made in
Everett, MA.

Call or write Philip L. Platt, Engi-
neering Department, Norton Company,
1 New Bond St., Worcester, MA 01606
(617 853-1000, Ext. 2904).

The joint Newsletter of the
Southern and Northern New England
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trial Archeology is published twice
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Graphic Designer.

Editor

David R. Starbuck

Southern Chapter Officers

Charles Parrott, President
Jeff Howry, Program Coordinator
Herbert Darbee, Secretary
Frederick Roe, Treasurer

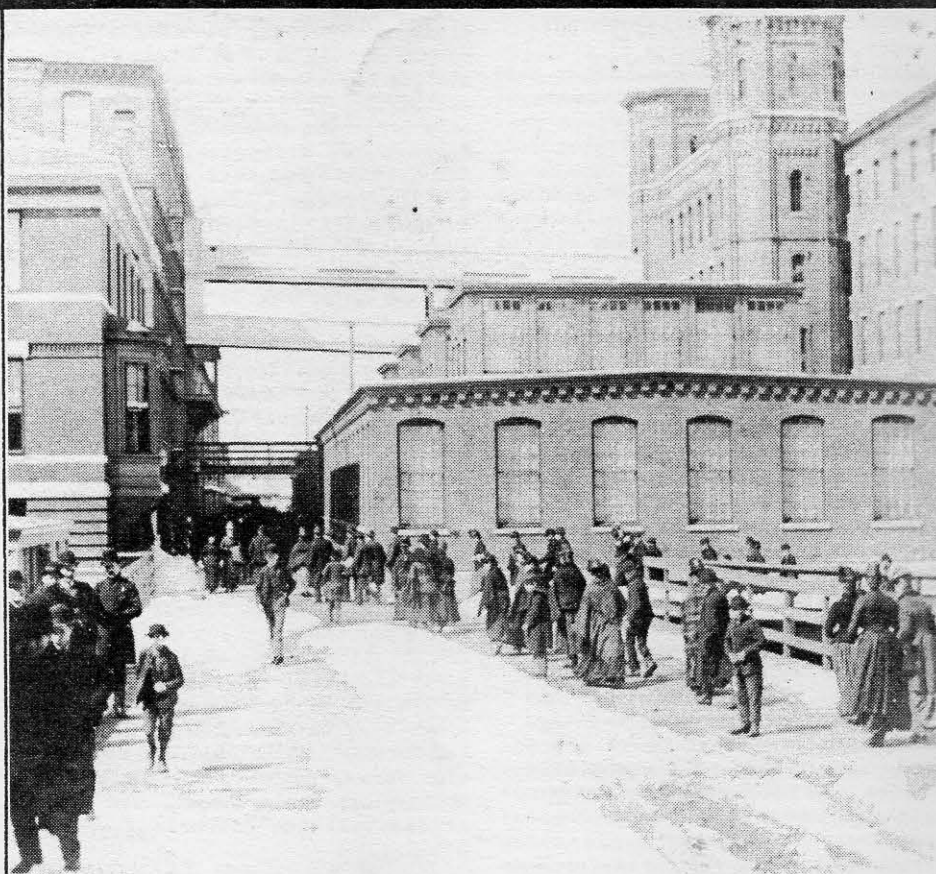
Northern Chapter Officers

William Taylor, President
Vic Rolando, Program Coordinator
Grace Rolando, Secretary
Vic Rolando, Treasurer

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Richard Anderson, Jr., David Engman, Robert Gordon, Faith Harrington, Charles Parrott, Philip Platt, Vic Rolando, David Simmons, Myron Stachiw, David Starbuck, Peter Stott, William Taylor, Steve Victor, Robert Weible

THE CLOCK STRIKES 12, and Time is ticking away... Register now for TICCIIH and join these folks in Lowell, Boston, and New England for a stellar IA-filled week, June 8-14, 1984.



4731. The Clock Strikes 12.

MEMBERSHIP APPLICATION

To apply for 1984 membership in either the Southern or Northern New England Chapter of The Society for Industrial Archeology please fill out the following form. (Members must also belong to the national Society for Industrial Archeology.) Membership in either Chapter automatically includes a subscription to the Newsletter.

Southern New England:

_____ Regular \$ 5.00 U.S.
_____ Student \$ 3.00 U.S.
_____ Institution \$25.00 U.S.

Northern New England:

_____ All Memberships \$5.00 U.S.

Make checks payable to: Southern New England Chapter, Society for Industrial Archeology and mail to to: Fred Roe
Treasurer, SNEC-SIA
837 Winter Street
Holliston, MA 01746

OR

Northern New England Chapter, Society for Industrial Archeology and mail to: Vic Rolando
33 Howard Street
Pittsfield, MA 01201

Name: _____

Address: _____