



Society for Industrial Archeology · New England Chapters

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Chapters Announce Joint Prize for Best Paper

The Northern and Southern New England Chapters have agreed to jointly sponsor an annual Memorial Prize for the best paper presented at the Annual Conference on New England Industrial Archeology (also known as the "Winter Conference") to be held February 1, 1992. The prize will be given in memory of two founding members of the New England Chapters, Michael B. Folsom and Herb Darbee.

Papers will be judged on the basis of original scholarship on any subject of industrial archeology within New England, and, recalling the great love of language held by both Herb Darbee and Mike Folsom, on literary style.

Papers will be judged by a yet-to-be-named standing Memorial Prize Committee, which will announce the prize recipient in the Spring issue of this Newsletter, following the conference. It will be formally awarded at the conference in the year following.

A proposal for a paper, in the form of an abstract, may be sent to the 1992 conference paper chair, Dennis Howe, 22 Union Street, Concord, NH 03301.

Peter Stott
Medford, MA

Fifth Annual Conference on New England IA to be Held Feb. 1

Reserve February 1, 1992, as the date for the Fifth Annual Conference on Industrial Archeology. Also known as "the winter conference" it will again be jointly sponsored by the SNEC and NNEC. Alternately held in northern and southern New England locations, this winter's event will be hosted by Plymouth State College in Plymouth, NH. We shall be meeting in Boyd Hall, Room 120, where most of the sessions of the 1990 conference were held.

Initial registration and coffee will begin between 9:00 and 9:30 a.m. We shall send out precise times once the program and all the presenters are confirmed. Slide projectors, VCRs and overhead projectors will be available for presenters. Lunch will be on your own. A list of local restaurants and nearby motels and B & Bs will be included with the program announcement. Dennis Howe has agreed to be the program chair and has already sent out a call for papers.

William Taylor
Plymouth, NH

Editorial

Very few of our members have been submitting news items to this newsletter, and I really want to encourage *all* of our members to do more writing! It is difficult to put out issues on time when copy is slow to come in, so if you've never published before, now is the time to start - *The New England Chapters Newsletter* can give you a very quick turn-around time between submission and actual publication!

Also, if you are thinking about writing a paper for the annual winter conference, do it now. Peter Stott has announced in this Newsletter that a fund has been set up to award a prize for the best paper.

In the President's Report for the Northern New England Chapter, you will notice that a recording project is being scheduled at Canterbury Shaker Village for the 1992 Memorial Day weekend. This Northern Chapter activity is open to all, and I hope to see many of you at the Village.

David Starbuck
Editor

Award of Distinction Presented Posthumously to Michael B. Folsom

On September 29th, 1991, the Southern New England Chapter presented posthumously its *Award of Distinction* to Michael Folsom, who died suddenly December 12th, 1990. In presenting the award, Larry Gross provided the following words of praise:

"Mike was a founder, President, and active member of the Southern New England Chapter of the Society for Industrial Archeology. He was a national board member and project director. But these dry facts obscure, rather than reveal, his contributions which lay in two broad categories.

"The first was the way he positioned the field in his life. Mike avoided the cautious specialization of the timid scholar and combined his many interests in a kaleidoscope of projects. Omnivorous in his pursuit of both understanding and transmitting industrial history, he applied industrial archeology to the study of literature as well as history, to exhibits as well as books, to recording projects as well as teaching. He never let it become an arcane specialty in which to hide, for rumination instead of communication. He brought it into his work as a light, a chance for illumination, not obfuscation. Thus industrial archeology was part of his teaching, for example, at MIT and Brandeis; it was part of his scholarship, in publishing projects and other research; it was part of his museum work, an alternate form of education, whether at the Charles River Museum which he was so instrumental in founding, at the Commonwealth Museum, at the Tsongas Center, or the many exhibits and recording projects on which he consulted.

The second contribution came from his enthusiasm for the process of industrial archeology, for its potential as a tool for research and education, for its prospects as a discipline. Mike did not simply describe the industrial past, he brought it to life in his essays, exhibits, talks, and other activities. He used it to put people in touch with history by making it real and interesting, by connecting it to the politics of everyday life, whether teaching, creating exhibits, or leading a tour through deepest, darkest Vermont and uncovering relics of IA at every turn, at the same time that he and Marcia hosted a camp-out of Chapter members, children, dogs, and whatever on the lawn of the Folsom farm (and the site of some killer volleyball games, as well).

"And in keeping with this last aspect, Mike also had this great shrug, of bemusement, of bafflement at times, or to show he was mystified by the obtuseness of the enemy, or even of com-

patriots, but a shrug which also, always, said, 'Don't let the bastards get you down.'

"Mike worked with many people here in numerous capacities. He could be counted on for his thoughtful advice, encouraging comments, and shared energy. We revered him for his abilities, his insight, his capacity to wonder. His memory remains, an inspiration to persevere.

"On behalf of the Southern New England Chapter, I present him the *Award of Distinction*, to be accepted by Marcia Folsom."

The occasion was the dedication, by the institution that Mike founded, the Charles River Museum of Industry, of the "Folsom School," a carefully designed and well-appointed lecture area set aside in one portion of the cavernous Boiler Room of the Francis Cabot Lowell Mill, which the museum now uses as its principal exhibition space. At a ceremony attended by scores of Mike's friends, colleagues, and museum supporters, a series of speakers remembered Mike's dedication to the museum, his family, and industrial history. The museum's President and Master of Ceremonies, John R. Beaver, and Marcia Folsom, now a trustee of the Museum, recalled the origins of the museum in 1980, when Mike first visualized a site for documenting the history of industries along the Charles River.

The Chapter's *Award of Distinction*, which has been presented only twice previously, is a bronze plaque initially created to honor retiring Baker Library Director, Robert Lovett, in August 1979. Herb Darbee was the second recipient, in 1988, for his long-time dedication to the Chapter as its Secretary.

In his memory, Mike's family has established The Charles River Museum Folsom Fund, to which donations may be sent, in care of the Museum at 154 Moody Street, Waltham, MA 02154.

Larry Gross/Peter Stott

President's Report, NNEC

The Northern New England Chapter toured the Belknap Mill and nearby industrial sites in Laconia, NH, on October 26, 1991. Mary Boswell, the Belknap Mill Society Executive Director, and Roger Gibbs, a retired engineer, discussed the history of the mill and the development of power generation at the mill. The mill has three vertical Samson turbines in place and is fortunate to have the services of Mr. Gibbs to aid in their restoration and interpretation. In the afternoon, Warren Huse discussed the evolution of industries in Laconia and led a walking tour of sites in downtown Laconia.

You will find in this edition of the newsletter a pullout section that is a membership directory for the Chapter. The membership listing is published as a result of an affirmative vote at the business meeting. There was some discussion during the meeting of setting up a speakers' listing as well. Harold Yeaton volunteered his name as a potential speaker. He has a number of slides on the reconstruction of an up and down sawmill and on steam sawmills in general. There was also some interest in adding members' research interests to the membership directory. If interested members would send either their research interests or topics on which they would be willing to speak, or both, to the Chapter secretary, this information will be added to future editions of the membership directory. Our secretary is:

Sue Richardson
939 Sawyer Hill Road
Canaan, New Hampshire 03741

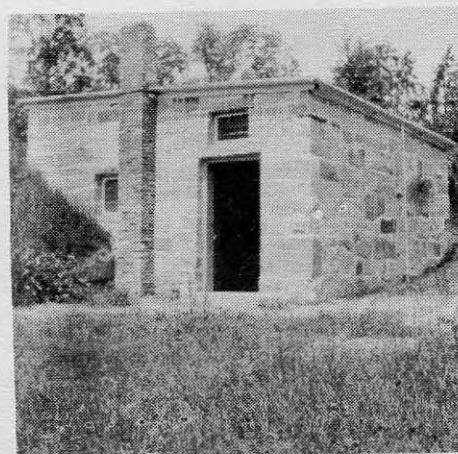
Other business included an announcement by Dennis Howe of the Fifth Annual Conference on New England Industrial Archeology. The conference is being organized by Bill Taylor and will be held at Plymouth State College on Saturday, February 1, 1992. This is always an interesting event and I hope to see many of you there.

The final business was the selection of a site for the Spring Meeting, and the election of officers. The Spring Meeting will be on the coast in the York, Maine—Portsmouth, New Hampshire region. It is being set up by Dick Borges and Woody Openo. Among other things they are looking into having a clambake as part of the activities. Finally, the Chapter officers were reelected to another term.

We have been discussing going back to the furnace in Pittsford, Vermont, and after we have had a chance to talk with Allen Hitchcock, the property owner, I will bring up the possibility of further work at a future Chapter meeting. We are also talking with Canterbury Shaker Village, New Hampshire, about a recording project at the Village next Memorial Day Weekend. This would involve recording their 1905 Pump Mill prior to their reconstruction of the mill in the summer of 1992.

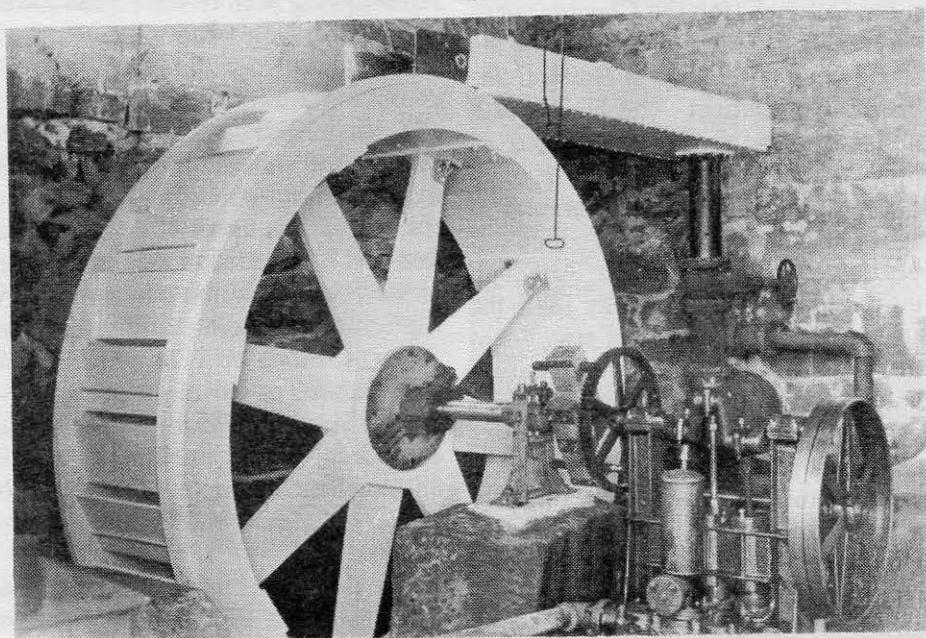
On a sad note, I have to report that Al Daloz, RFD, Box 819, Hancock, New Hampshire 03449, died this past August while on a cruise to Alaska. His many friends will miss him.

Walter Ryan
Claremont, NH



An early photo of the Pump Mill building at Canterbury Shaker Village. While the stone walls remain today, the roof and pumping machinery are gone. The site has been proposed for recording by the Northern New England Chapter prior to preservation work which is scheduled for summer 1992.

An early view of the overshot wheel and pump which was inside the stone Pump Mill building at Canterbury Shaker Village. The cleverly-designed mill was powered by water from Factory Pond and pumped water to cisterns at a higher elevation.



President's Report - SNEC

The fall season saw activities of the chapter in several parts of the region. On September 29, 1991 the chapter posthumously presented its *Award of Distinction* to Michael B. Folsom. The occasion was the dedication of the Folsom School, a learning center at the Charles River Museum of History in Waltham, Massachusetts. Among Michael's accomplishments was the founding of the Charles River Museum of Industry at the Francis Cabot Lowell Mill in Waltham, a National Historic Landmark rehabilitated for affordable housing in the early 1980's which included space for a museum. Michael was actively involved in the Chapter's activities for more than a decade. In early December of 1990 Michael arranged a tour of the Waltham Watch Company building at the Chapter's fall meeting. A week following the meeting Michael died suddenly. In recognition of Michael's leadership in education involving industrial history, as well as his efforts on behalf of SIA, the Chapter voted to present the Award of Distinction to Michael. On the occasion of the Folsom School dedication, Larry Gross presented the award on behalf of the Chapter, which was accepted by Michael's wife, Marsha Folsom.

On October 19th the Chapter sponsored a work party at the site of the Eagle Cheese Factory in North Colebrook, Connecticut. The factory is a timber framed structure dating from the early 1870's which was the focus of an early effort by local dairy farmers to establish a cooperative to produce and sell cheese to urban markets. Although the cooperative was closed by 1875, the structure and some of its equipment remained. During more than a century of use for storage, the building was near collapse until the present owners decided it was time to undertake some serious structural repairs. Unfortunately a vast amount of material had accumulated in the structure which prevented access to floors and other structural elements which needed to be

replaced.

An exquisite fall day was the backdrop for a group of SNEC members and interested local individuals to remove, sort and organize the contents of the factory. Matt Roth, a Chapter member living in Hartford, directed the event. Matt located the factory in the process of conducting research for an exhibit on local industry being prepared for the Berkshire Museum in Pittsfield, Massachusetts. Some of the equipment used for cheese making will become part of the museum's permanent exhibit currently being prepared on local history.

The Chapter's fall meeting had a nautical theme, and was held on November 9th, hosted by the Essex Shipbuilding Museum in Essex, Massachusetts. Ms. Diana Stockton, Director, and Jim Withim, Curator, provided an introduction and overview of Essex and its history. The town distinguished itself with a long tradition of wooden shipbuilding extending back to the early decades of the nineteenth century. Included with the morning's gathering at the museum was a tour of their newest acquisition, the *Evelina M. Goulart*. The *Goulart*, constructed in 1927, is one of the last wooden fishing schooners constructed in Essex presently known to exist. After having been refloated and towed from Fairhaven Harbor on Martha's Vineyard last year, the vessel was pulled out of the Essex River in the center of town on land dedicated by the community for shipbuilding in the nineteenth century. Assisted by volunteers, the museum is undertaking a restoration that is intended to make the vessel an interpretive exhibit out of water. At the museum's headquarters on Main Street, exhibits provide insightful interpretations of various aspects of the town's maritime history, as well as other local industries. The museum is an excellent example of the type of successes a local history museum can achieve.

The luncheon business meeting was held nearby at Woodman's, home of

the fried clam (and other salt water delicacies). The slate of officers elected for 1992 were as follows: Michael Steinitz, President; Pat Fitzmaurice, Vice President/Program Coordinator; Marty Bowers, Secretary and Maureen Cavanaugh, Treasurer. Following lunch, the program continued in nearby Gloucester. Although a tour of the schooner *Adventure* was arranged, the volunteer staff never arrived. Instead, Jeff Howry led an impromptu tour along the waterfront that included the Gloucester Marine Railway on The Loop in downtown Gloucester. Jeff explained that the city was selected as the location for the design of a survey program focused on identifying the broad spectrum of a community's maritime resources that include industrial and commercial properties. The rationale of the maritime survey program was based upon previous research which reviewed the state's survey files and disclosed that even in communities with very thorough surveys, industrial and commercial sites were often omitted. The completed survey design program is titled, *Historic Maritime Resources: Planning for Preservation*, and is available from the National Trust for Historic Preservation, Washington, D.C.

The Chapter is looking for new meeting sites and projects for 1992. If you have any suggestions, please send them along to Pat Fitzmaurice, Old Schwamb Mill, 17 Mill Lane, Arlington, MA 02174.

Jeff Howry
Lexington, MA



Photo courtesy Joel Librizzi, *Berkshire Eagle* staff.

Fire Destroys 118-Year-Old Gasholder House

An early morning fire of unknown origin destroyed the 1873 gasholder house in Pittsfield, Massachusetts on September 5, 1991. The gasholder house had been rehabilitated to house the offices of the Berkshire County Association for Retarded Citizens (BCARC), one of the county's largest employers which aids 350 retarded people. The 2 a.m. fire destroyed the offices, computers, and records of the BCARC. Called by one official as "a million dollar fire," there is no indication that the blaze was another in a series of arsons that have been devastating the city. A team of investigators immediately set to work probing the charred wreckage looking for the cause of the blaze.

Initial newspaper reports (*The Berkshire Eagle*, September 6, 1991)

said that despite heavy damage to the interior and roof, fire officials felt that the thick brick walls were still structurally sound. On October 8, however, the building was suddenly demolished, an act which precludes any historic preservation efforts to repair the structure. The property is owned by Omega Corporation, which leases it to the BCARC which is now operating out of the former gasworks' engine house a few dozen feet away. Only a flat, ground-level, round concrete base of the gasholder house remains visible today as a clue to the location of the once 18-foot deep cellar.

The gasholder house was one of those reported by Mary Pyne in "New England's Gasholder Houses" (1989, *IAVol.* 15, No. 1, pp. 54-62): "Built in 1873 by architect Charles T. Rathbutn got the Pittsfield Coal and Gas Company... The conical roof, covered with asphalt shingles, is top-

ped with a small ventilator." The roofing material was later replaced. The original tank capacity was 85,000 cubic feet, making it the third largest in New England reported by Mary Pyne 1989 (The largest was the 1870 Boston, MA, gasholder of 330,000 cu. ft., followed by the Concord, NH, gasholder of 125,000 cu. ft.). After its gasholding days, the building found many uses, including furniture and automobile storage, a bakery, and a stop-smoking clinic. Just before BCARC moved in, the building was under consideration for use as a restaurant. One owner's refusal to replace the asphalt shingles with slate shingles, as its roof had been originally covered, disqualified the structure's nomination to the National Register.

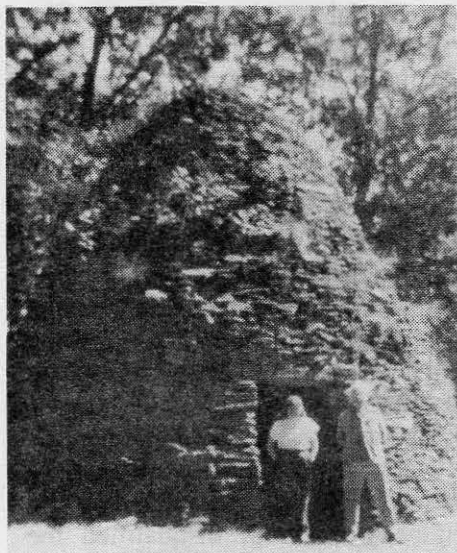
Victor R. Rolando
Rutland, VT.

Current Research in New England

Massachusetts

Group Meets to Preserve Charcoal Kiln

About a dozen interested and directly concerned people met in the shadow of a fully standing stone-type conical charcoal kiln at East Hawley, Massachusetts, on September 7, 1991. The purpose of the two-hour meeting was to discuss stabilization and preservation ideas for the kiln. Included in the meeting were its organizer Harrison Parker, Hawley Town Selectman and Town Historian; Gwendolyn Hallsmith, Franklin County Planner; Karl Honkonen who represented the State of Massachusetts; Jerry Pratt, a stone cutter who provided many insights into how stone structures react to varying stimuli; representatives of the State Forest; local citizens; and the undersigned.



Gwendolyn Hallsmith, Franklin (MA) County Planner, and Harrison Parker, Hawley Selectman, standing at the bottom charging opening of the conical stone charcoal kiln at East Hawley.

Stabilization was the immediate concern of the group, which recommended the immediate removal of brush and small trees that are growing out of the kiln walls, followed by covering the structure either with a large plastic sheet or a roofed-over cover. This would prevent rainwater from soaking into the kiln wall, and reduce further deterioration which results when water freezes and expands in the wall during the winter months.

The kiln was built in 1872 by William O. Bassett, an enterprising farmer who saw potential profits from his woodlot to augment income from his 400-acre farm. The charcoal was probably carted three miles north to Charlemont, thence by railroad to market. The 25-foot high by 25-foot diameter kiln operated until about 1900 when it was used to house pigs. The kiln now stands just west of East Hawley in the Dubuque Memorial State Forest. The structure is probably unique to the entire state.

The group's immediate need is to obtain the services of a professional architect to advise them on ways to stabilize and preserve the conical kiln. Please contact: Harrison Parker, Singing Brook Farm, Middle Road, Hawley, Massachusetts 01339 (413/399-5513).

Vic Rolando
Rutland, VT.

O.S.V. 1992 Field School in Historical Archaeology

Last spring Old Sturbridge Village archeologists discovered an impressive sawmill site with storage pond, dams, and mill foundations perched between rocky ledges on museum property in Sturbridge, Massachusetts. The site, occupied by local sawmill owner James Johnson from 1820 to 1857, and nearby remains of a dwelling will be the focus of the 1992 Old Sturbridge Field School in Historical Archaeology. The field school runs from June 22 - August

7, 1992 and is under the direction of John Worrell, Director of research and Martha Lance, Research Fellow in Historical Archaeology. Excavation of the mill site and dwelling will enrich research already underway on rural sawmilling and the timber trade as part of a grant study partially funded by NEH entitled, "Tradition and Transformation: Rural Economic Life in Central New England 1790 - 1850." Curriculum this year will emphasize the effects of industrialization on the countryside and rural industries.

Field School participants are involved in excavation, survey, measured drawing, conservation, computer, and other field, lab and recording activities. Lectures and workshops by Village staff and trips to historic sites and museums complement field and lab work. Students participating in the Field School will be able to register for academic credit, the equivalent of a two-semester undergraduate or graduate course.

No previous archeological experience is required of applicants, although it is expected that they will have completed at least one year of college.

For more information please write or call: Martha Lance, Archaeology Field School, Old Sturbridge Village, 1 Old Sturbridge Village Road, Sturbridge, MA 01566. (508) 347-3362.

Martha Lance
Sturbridge, MA

Connecticut

Norwich Mill Enhancement Program

Norwich, Connecticut, was one of the most prosperous cities in the state during the 1800s. Vast investments were made in the textile industries. Several mills and associated mill villages were developed. Norwich had become dominant in the economic, political and social life of Connecticut.

It was a grand era for Norwich, and when its composition, physical structure, building inventory, and character were established.

However, today with the decline of the textile industry in the region and the changes in needs for industries, Norwich is left with a legacy of the past success and fourteen deteriorating and largely vacant mill buildings.

The City has recognized that if nothing is done to alter the trend, the structures will soon be demolished, and an important part of Norwich's past will be lost. In response, the City is developing a Mill Enhancement Program (MEP) that will stress adaptive re-use of the mills. Planning is essential if this common, but complex, pattern of mill deterioration is to be reversed; however, the implementation of the plan will be the most important element of the success of the MEP.

The concepts of the MEP are simple and include the following:

- Inventory the mill complexes providing information of the history, as well as the structural components of the buildings.
- Interview the mill owners and tenants for commitment to the program and intentions for future development.
- Create incentives for the development of the mills such as low interest loans, grants, tax deferrals, and zoning bonuses.
- Prepare an analysis outlining assets and concerns for the re-use of the mills. Compile a list of potential and desirable uses.
- Prepare a marketing strategy that will provide the steps needed to implement a marketing program.
- Implement specific tasks that are outlined in the marketing strategy.

The City is financing the research and programs through a variety of funding sources. The Connecticut State Historic Preservation Office (SHPO) has awarded the City a grant for a feasibility and planning study of the

historic mills. This study will deal with most of the planning issues of the MEP. In addition, a second grant application has been submitted to SHPO to provide partial funding to prepare the marketing strategy. Both grants are provided through the Certified Local Government program.

The issue of dealing with the problem of the mills is not unique to Norwich, and it has been a chronic problem throughout the Northeast. Due to the economic setbacks now occurring in the Northeast, Norwich is concerned that the mills will continue to deteriorate until it is impossible to save them. To lose the mills would be an incredible loss to the City, since they played such an important role in the City's establishment. The program in its completed form will become a model for many communities to help reverse the progression of the mill deterioration.

Kathy B. Warzecha
Norwich, CT

Historic Bridges of Connecticut

In the 1980s Simsbury built a new bridge on Drake Hill Road, the historic approach to the center of town from the east. The single-lane pin-connected Parker through truss that forded the Farmington River was left standing as it has since 1892, converted to a pedestrian pathway. The new two-lane steel and concrete bridge was constructed 350 feet downstream, leaving the venerable bridge to rest in its glory.

Today, historic bridges are being preserved, valued not only as unique documents of technological achievement but as artifacts adding richness and diversity to the landscape.

Connecticut's Historic Highway Bridges, by Bruce Clouette and Matthew Roth, chronicles over two hundred years of technological development in bridges. This beautifully illustrated volume begins with a

history of Connecticut bridges and follows with an in-depth analysis of types: covered bridges, masonry arches, iron and steel bridges, concrete arches, Merritt Parkway and movable bridges. More than forty structures are covered in detail. This publication clearly illustrates why many historic bridges continue to be objects of great interest and civic pride.

The earliest bridges were constructed of natural materials with wood dominating the pre-industrial era. Colonial and early republic records are filled with accounts of timber bridges being lost in the frequent floods of springtime. As the population concentrated in towns and cities, more permanent structures were demanded such as the 1833 Meadow Road stone arch over the Pequabuck River in Farmington.

The stone arch was a common pre-1900 structure, noted for its permanence. Many stone arches, with spans ranging from twenty to one hundred feet, survive and rank among the most revered and beautiful bridges in Connecticut.

The need for longer spans stimulated the application of truss technology to bridge construction. (Trusses use diagonal structural members to transfer vertical forces in a horizontal direction.) Early engineers like Ithiel Town of New Haven designed and patented trusses capable of longer spans. Truss technology was further advanced in 1840 when William Howe patented a truss combining wood, as the compression member, and wrought iron rods as the tension members. The 1873 Comstock Bridge over the Salmon River between Colchester and East Hampton is a rare example of Howe's technology, a beginning of the Industrial age in bridges.

The glory of the state is its collection of metal truss bridges, the product of the industrial revolution which transformed the nation. By the mid-1880s, men such as Squire Whipple, Albert Fink and Francis Lowthorp were using both advances in processed materials such as cast and wrought

iron and new engineering principles to design truss bridges constructed entirely of metal.

No bridge better reflects the advancement of metal over wood than the 1871 Riverside Avenue Bridge in Greenwich. An intricate and lacey combination of cast and wrought iron, and one of the most important historic bridges in the country, the bridge is nearly perfectly preserved and its unusual patented details illustrate the "experimental" nature of many early trusses.

The lenticular truss (distinguished by the elliptical shape formed between the top and bottom chords) is one of the most interesting late nineteenth century designs. A specialty of the Berlin Iron Bridge Company, hundreds were built throughout the country. Two now remain in New Milford. This truss and many other types of trusses built after 1885 were fabricated from standardized rolled and stamped shapes of the new material — steel.

With the perfection of the Bessemer process in the 1870s, steel which is strong both in tension and in compression quickly eclipsed iron as the material of choice.

Steel then played an important role in the development of concrete, the newest bridge material. Concrete — a mixture of sand, cement and stone mixed with water — has tremendous compressive strength similar to stone. The combination of concrete and reinforcing steel (as tensile member) allowed seemingly unlimited possibilities structurally. Concrete is also plastic enough to be molded into architectonic shapes. Reinforced concrete bridges, introduced as short arched spans in the 1890s, quickly gained favor during the first decade of this century.

Constructed prior to World War II, many multi-span reinforced concrete bridges cross rivers and roads in Connecticut. The 1910 Edgewood Avenue Bridge in New Haven and the open spandrel Housatonic River Bridge in Cornwall are two of the most handsome in the state.

(Reprinted from: *Connecticut Preservation News*, September/October 1991)

Mary E. McCahon

Beacons on the Shore: Connecticut's Historic Lighthouses

Situated near the state's primary harbors and treacherous offshore locations in Long Island Sound, Connecticut's lighthouses continue their critical function as navigational beacons to safely guide commercial shipping and pleasure boat traffic. Architecturally and technologically impressive, these lighthouses include early nineteenth century brownstone towers; Second Empire and Gothic Revival examples with complete living quarters attached; and mid- to late nineteenth century prefabricated cast-iron structures.

Connecticut's share of the Bicentennial Lighthouse Fund, which was established by Congress in 1988 to honor the 200th birthday of America's lighthouse system, was made available to the Connecticut Historical Commission under a grant program administered by the National Park Service. This partnership was then broadened to include owners of the state's lighthouses. With their cooperation, lighthouses as both evocative symbols and essential safeguards in maritime history were identified, researched, photographed, and restored between 1988 and 1991.

The first priority of the Commission was to complete the nomination of all of the state's lighthouses and lightkeepers' cottages to the National Register of Historic Places. This has now been done. Listing on the National Register qualified the properties to receive funding for preparation of plans and specifications, rehabilitation and restoration, and archival photodocumentation.

National Register nominations are on file with the National Park Service in Washington, D.C., and the Con-

necticut Historical Commission. Included in the nominations are architectural descriptions, historical summaries, photographs, and maps. In addition, detailed descriptive analyses and photographs for Connecticut's U.S. Coast Guard-administered lighthouses are in the Special Collections Department of the Homer Babbidge Library at the University of Connecticut, Storrs. All lighthouse information which is held by these repositories is available to the public.

Historic American Buildings Survey Photodocumentation

During the fall of 1990, the Connecticut Historical Commission contracted with Wayne Flemming Studios, Hartford, to document six of Connecticut's lighthouses to the standards of the Historic American Building Survey. The Bicentennial Lighthouse Fund financed the project. The Historic American Buildings Survey (HABS), in partnership with the Historic American Engineering Record (HAER), has amassed one of the largest collections of architectural documentation (photographs, measured drawings, historical data) in the nation.

Six Connecticut lighthouses were photographically documented: New London Harbor, Stratford Point, Faulkner's Island, Black Rock Harbor, Stonington Harbor, and Sheffield Island. Both Stonington Harbor and Sheffield Island are museums open to the public. After review, photographs of the lighthouses and accompanying narrative summaries will be available to the public in the Prints and Photographs Division of the Library of Congress. Copies are also deposited in the Special Collections Department of the Homer Babbidge Library at the University of Connecticut, Storrs.

(Reprinted from: *Connecticut Preservation News*, July/August 1991)

Mary M. Dohohue
David A. Poirier

Connecticut's Lighthouses in Chronological Order

Lighthouse and Location	Date of Construction
New London Harbor New London	1801
Faulkner's Island Guilford	1802
New Haven Harbor New Haven	1805
Black Rock Harbor Bridgeport	1809
Lynde Point Old Saybrook	1838
Stonington Harbor Stonington	1840
Great Captain Island Greewich	1868
Sheffield Island Norwalk	1868
Morgan Point Groton	1868
Penfield Reef Fairfield	1874
Southwest Ledge New Haven	1877
Stratford Point Stratford	1877
Stratford Shoal Stratford	1878
Stamford Harbor Stamford	1882
Saybrook Breakwater Old Saybrook	1886
Tongue Point Bridgeport	1894
Greens Ledge Norwalk	1902
Peck Ledge Norwalk	1906
New London Ledge New London	1909

Vermont

Forest Dale Blast Furnace to be Stabilized

Action toward stabilizing the blast furnace stack at Forest Dale by the Vermont Division for Historic Preservation is continuing. The work was in response to the partial collapse of some of the in-wall material which I discovered in early spring of 1990 and reported to the Division. After inspection by Division personnel, Wright Construction was contracted to shore up the furnace's collapsing stone walls with sturdy timbers and protect the over-all structure from rain and snow with a partial plywood wall and asphalt-shingled roof, which was accomplished in late fall, 1990.

On November 6, 1991, I attended a meeting at Montpelier with John Dumville of the Division, David Briggs, an engineer with Ryan-Biggs Associates, Troy, NY, and John Ostrom, an architect with the Vermont Department of Buildings, to discuss various approaches to repair the stack while considering the eventual opening of the site to the public.

One immediate result was an inspection of the stack on November 18 by engineer Steve Sopko of Ryan-Biggs, who cut an entry hole through the

plywood and asphalt "top house" to allow inspection of the furnace top and the inside lining walls. While Steve was completing his inspection, the Site Administrator, Audrey Porsche, and I spent the better part of the afternoon clearing logs and debris from the cellar hole of what was the former works tenement house which had more recently contained a lean-to built by some young neighborhood campers.

On November 19, David Pinkham, a retired surveyor, Audrey and I spent a half day searching for the property boundary markers that defined the approximately 10-acre furnace grounds owned by the Division. Meanwhile, Stan Wiggins of the Vermont Department of State Buildings has also been accomplishing brush control by cutting small trees that insist on reverting the site to a wilderness. Brush that had been cut during and following the Northern New England Chapter's Spring 1989 recording project was found to have been burned directly in front of the furnace stack, leaving an obvious patch of charcoal and ash that could complicate later archeological work. Division personnel promised to remove rather than burn anything in the future.

Repair work on the stack is expected to occur before the end of 1991, weather (and state budgets) permitting.

Vic Rolando
Rutland, VT



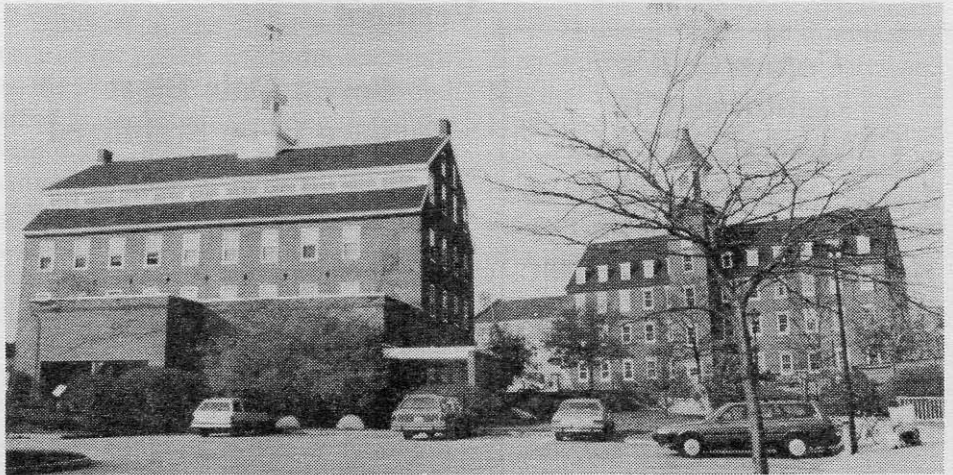
West wall of the Forest Dale furnace showing the archway support timbers and the roof-top protective structure (Spring, 1991).

A Report of the NNEC Fall Tour

The Fall Tour of the Northern New England Chapter was hosted by the Belknap Mill, Laconia, New Hampshire, on October 26, 1991. Mary Rose Boswell, Executive Director of the Belknap Mill Society welcomed the group of forty and told them about the mill and its history. The former hosiery mill is possibly the "oldest largely-unaltered mill of its type in the New England region," ca. 1823-28. Presently the first floor is occupied mainly as an art gallery, a gift shop and a museum exhibit of the 1918 hydroelectric system. The second floor has office space which is occupied by community service organizations. The third floor has remained unchanged for about 100 years, except for the addition of a small kitchen and rest rooms, and is used for meetings. The fourth floor, also largely unaltered, is used as a studio by artists and craftspeople. The 1823 bell and the early freight elevator are visible on the fourth floor.

During the early years of management by the society, beginning twenty years ago, the Belknap Mill was promoted as an art center rather than an industrial museum because many people in the community who once worked there harbored ill feelings. Preservation of the mill was deferred until recent years partly because of the nonsupportive public attitude and partly for economic reasons. The mill narrowly escaped demolition for a parking lot in Laconia's episode of urban renewal. Now there is increasing pride in Laconia's mills among old workers, strengthened by oral workshops and exhibits. Roof repair, stabilization of the foundation, and wheelhouse preservation work is being accomplished with funding from several sources.

A permanent exhibit of machinery has been developed largely by Roger Gibbs, a retired mechanical engineer and NNEC member, who spoke briefly to the group about the power system



The Belknap Mill (left) and the Busiel Mill in Laconia, New Hampshire, site of the NNEC fall meeting and tour.



The power train in the Belknap Mill is inspected during the NNEC fall tour.



The B&M Railroad station in Laconia, New Hampshire (circa 1892, Bradford Lee Gilbert, architect).

and machinery. Some of the mill's machinery was manufactured by the W.D. Hayes Company and the Scott and Williamson Company. The latter was located in Laconia from 1916 until its closing c. 1981 (it was founded in Philadelphia in 1860). These companies made the knitting machines (out of hundreds once utilized) which have been preserved and displayed at the mill along with the electrical power switchboard. During its final manufacturing phases, the Belknap Mill was powered by three 100 h.p. water turbines (which are still in place and may be viewed) and a 100 h.p. steam engine which provided backup during low water flow.

Roger told the group that the Belknap Mill Society worked with architect Paul Mirsky, who received a commendation from the National Trust for his preservation of the building. The NNEC members had the opportunity to tour the mill from its turbine boxes to its bell tower, literally.

Historian Warren Huse provided the group with a slide presentation of Laconia's industrial history and later led the group on a walking tour. Among the notable structures which were viewed were the B&M Railroad Station (1892; attributed to Bradford Lee Gilbert of New York) and the Gale Memorial Library (1901-03, by Charles Brigham of Boston). For these, see *New Hampshire Architecture* by Bryant F. Tolles, Jr., with Carolyn K. Tolles. The Mediterranean style hotel building (c. 1910) is also interesting. Besides the mill and station, the Laconia Car Company buildings were of special interest to the Chapter. The huge chimney, ventilators above (presumed) forges and the huge doors with the remains of tracks coming out—all give evidence for the impressive industrial past of this complex and the City of Laconia.

Woodard Openo
Somersworth, NH

A Report of the SNEC Fall Tour

On a cold clear Saturday morning in early November, 30+ hearty SNEC souls met at the Essex Shipbuilding Museum in Essex, MA, for the fall meeting. Introduced by Museum Administrator Diana H. Stockton, Curator Jim Witham gave an informative survey of Essex shipbuilding. The peak production era was 1850, and wooden vessels were built in Essex until c. 1947. Following WW II, there was not enough money in this labor-intensive craft to keep returning soldiers interested, and when the shipbuilding era ended, it was still essentially a low-tech, hand-crafted profession.

The museum itself is an 1835 former school house building. A two-story frame structure, it is located on the first floor, and exhibits about local shipbuilding are featured; interesting photographs and tools of the trade are displayed and interpreted. The upper floor of the museum serves as an office, archive and hall for meetings/lectures. Since the founding of the museum in 1979/77, incoming artifacts have created an acute need for more space. Sound familiar?

Ships produced in Essex were built mainly for the fishing industry. None of the shipbuilders accumulated great wealth as it was common practice to build vessels on leased land. Indeed, some of the builders were known to have constructed vessels during the winter, then in the summer they would take to the sea to fish, only to sell their vessels at the end of the season, lease land once again and build anew. Sites were required that gave the shipbuilders access to the Essex River where they could launch their newly constructed ships on the outgoing high tide. With only a 13-foot draft possible, vessels of up to 150 feet were built there but the average length was 80 to 90 feet; size limitations were imposed by the depth of the river itself. There was a geographic marriage between the

towns of Essex and Gloucester, as Gloucester, renowned for the size of her fishing fleet, had many working vessels crafted in nearby Essex yards.

Family members passed down the skills of their trades, and Jim explained that whole families specialized in a trade and worked in groups and might travel to more than one shipbuilding site per day. For example, the caulkers might do a morning's work at one yard, and following the plankers, move to another vessel under construction in another yard. Passed around for all members to handle were a half-hull, a caulker's mallet, a caulking iron, a flat moulding board which contained the angles necessary for the building of the body of the vessel. In 1850, a driller who worked an auger through 2 to 3 feet of timber per hole, in order for the treenails to be inserted and pounded into place, received one penny per hole. In a good week, he might earn \$3. A lot of holes and hard labor to be sure. This job, however, was essential, for it was these holes and treenails that did the job of holding a wooden vessel together, and many a ship had up to 3000 holes augered into her ribs and outer planking, and more still for the interior ceiling. Jim also explained that if a caulker pounded in the oakum too loose it would come out, and if too tight it would make the outer planks pop off the ribs; the caulker's job was one of skill as well as speed.

Tour participants also walked to the nearby and former site of the A.D. Story Shipyard to have a close-up view of the 1927 Essex-built schooner, *Evelina M. Goulart*:

"The *Goulart*, one of only five known surviving Essex-built commercial schooners as an auxiliary-powered swordfishing schooner. In the 1950s she was rigged as a trawler. Raised from the mud of Fairhaven Harbor (Connecticut), where she sank at the dock in the early 1980s, the *Goulart* was given to the Essex Shipbuilding Museum, and towed back to the place of her construction. She will

provide the focus for future interpretations of the history of the shipbuilding industry in Essex, where shipyards have produced thousands of vessels over the past three hundred years." (SNEC Program Announcement for the Fall Meeting, 1991.)

Lunch and a business meeting were held at Essex's finest eat-in-the-rough emporium, "Woodman's," the disputed originator of the famed New England fried clam. The chowder was tasty and hot, the clams agreeable, and we sallied forth to Gloucester for a tour of the

"schooner *Adventure*, a bowspritless 'knockabout,' and the last of the dory fishermen. Built at the John F. James Shipyard in Essex in 1926, the *Adventure* is a two-masted wooden sailing vessel which fished out of Gloucester and Boston until 1953, and which is now under restoration for use as a training vessel, maritime museum and excursion boat." (*Ibid.*)

The Gloucester Marine Railways, a still-in-operation boat repair facility dating from 1859, was the last stop on the tour.

Done in by the cold and no-show of the guide for the *Adventure*, we turned tail and headed north for home and Newburyport where the last wooden vessel to come off our ways was the *Mary L. Cushing*, a three-masted schooner built in the John Currier yard and launched in 1883.

The prize for having driven the greatest distance went to David Starbuck of Fort Edward, NY, and Grace and Kenneth McIver of Scotia, NY, who came early and stayed with her sister and husband in Hingham (as I recall) and brought them along for a taste of SNEC-SIA. Along with the McIvers, Paul McGinley and Betsy and Jonathan Woodman met up again with stories to tell and retell from the recent SIA fall tour in Deadwood, South Dakota.

Betsy H. Woodman
Newburyport, MA

Article

A Brief Analysis of a Metal Sample From the Pittsford, Vermont, Iron Furnace

The Granger Iron Furnace in Pittsford, Vermont, operated from c. 1791 to c. 1883. The artifact analyzed here was recovered as a possible furnace product sample from a small test pit dug at the front of the furnace by Megan Battey and Walter Ryan during the Northern New England Chapter's work at the site, May 25 to 27, 1991. (See the Newsletter, Vol. 11, No. 1, 1991, pp. 6-10.) It was found just below the topsoil in a mixture of charcoal and yellow clay. The artifact, illustrated in Plate 1, was analyzed in the metallurgy lab and the physics lab of the New Hampshire Technical College at Claremont, New Hampshire.

The artifact was roughly bottle shaped, approximately eighty-five centimeters long, eighteen centimeters wide, and 1.3 centimeters thick. Its mass was 88.6 grams. Its specific gravity, 6.03, is a little light when compared with the published value for cast iron of 6.95. This may be caused by either voids or inclusions within the artifact.

The artifact was sectioned approximately ten centimeters from the narrow end, and the section was mounted so that it could be prepared for metallographic analysis. After section-

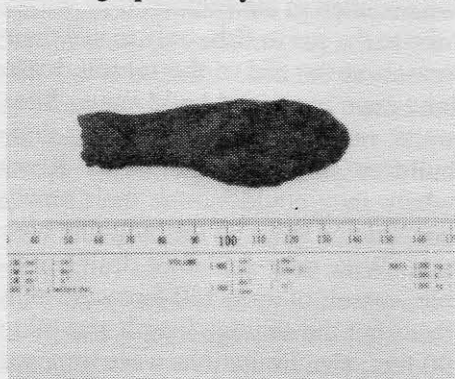


Plate 1. The Pittsford furnace sample.

ing, a spark test was performed, comparing the larger piece of the artifact to several known metal samples. The spark pattern of the Pittsford artifact most nearly matched that of a modern piece of gray cast iron.

The mounted section was then ground. After fine grinding on 600 grit paper, a Rockwell hardness test was performed. The tester was set up and calibrated against a known test block, and ten hardness measurements were taken on the Pittsford specimen. The results are shown below:

Measurement Number	Rockwell Hardness
1	B59.0
2	B75.5
3	B78.0
4	B81.5
5	B78.5
6	B78.0
7	B80.5
8	B74.0
9	B77.0
10	B79.55

This is slightly softer than a modern ASTM class 20 gray cast iron.

The section was then polished. After polishing, but before etching, the specimen was observed and photographed at 100X magnification. The graphite flakes in the specimen show up as randomly oriented dark lines and areas in the photograph (Plate 2). The graphite flakes shown in this photograph compare quite well with those shown in an ASTM Type C graphite flake in gray iron example. Type C flake graphite is common in hypereutectic (more than 4.3% carbon) gray cast iron. The graphite flakes are AFS/ASTM size three.

The section was then etched in a 3% Nital solution. Observations were made

and photographs taken at 100X, 400X, and 800X magnifications (Plates 3-5). In these photographs the graphite flakes show clearly against the matrix of pearlite. (Pearlite is the eutectoid mix of iron and carbon. It contains 0.83% carbon.) There is very little free ferrite (almost pure iron) observable in any of the photographs.

No very surprising conclusions can be drawn from this artifact. Its general

physical appearance indicates that it was probably formed when some molten iron was spilled during the casting process. Its location, near the surface of the ground immediately in front of the furnace, where the casting shed would logically have been, dates it to a time close to the end of the iron-making operations at this site. Metallographic examination reveals that it is a fairly soft piece of high-

carbon cast iron. Chemical analysis of this artifact and a thorough analysis of more samples of products from the Pittsford furnace are necessary before any meaningful generalizations can be made concerning the quality of the cast iron produced there.

Walter Ryan
Claremont, NH

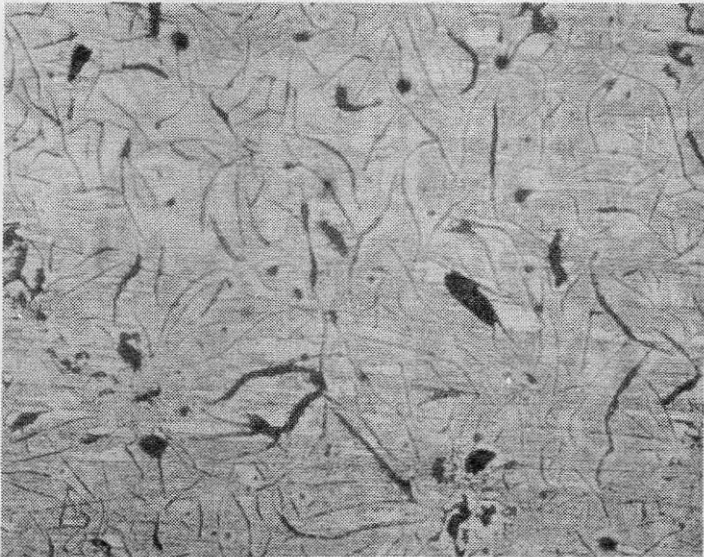


Plate 2. Sample, polished, not etched (100X).

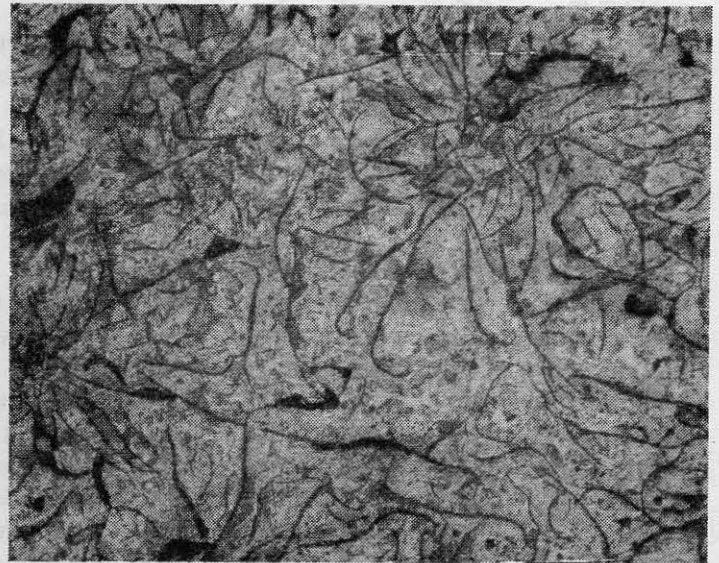


Plate 3. Sample, etched with 3% Nital (100X).



Plate 4. Sample, etched with 3% Nital (400X).

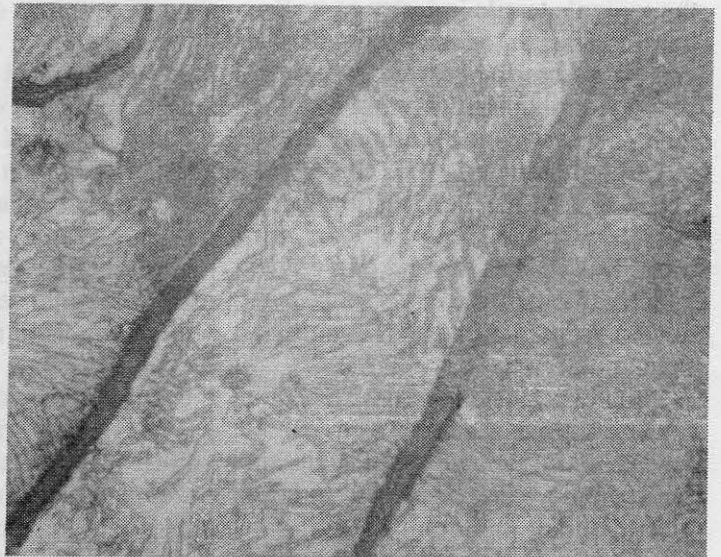


Plate 5. Sample, etched with 3% Nital (800X).

Meetings

Vernacular Architecture Forum

Portsmouth, NH
May 13-17, 1992

VAF Tours of Portsmouth and
the Piscataqua

"An-Old-Town-By-the-Sea":
Urban Landscapes and
Vernacular Building in
Portsmouth, N.H. 1660-1990

Two days of walking and bus tours in the City of Portsmouth will explore the morphology, vernacular building forms, and changing technologies of a small New England city that celebrates itself as a colonial capital and federal seaport. In reality, this urban landscape is the product of large and small scale "editing". While much survives from a late eighteenth and early nineteenth century rebuilding of the colonial core, the city also holds substantial elements of coastal New England's response to the region's textile industry as well as later-nineteenth century commercial and manufacturing growth. A regional center for the inland communities that formed its economic hinterland in the eighteenth century, the city's role changed with the introduction of the railroad. By the 1860s, at least, this event was seen as the end of a golden age; traditionally the city's subsequent development is interpreted in terms of stasis or decline.

Portsmouth slowly developed a modest tourist reputation on its old buildings and type of urban landscape increasingly being destroyed in large metropolitan centers. Indeed, the migration of its young men and women to the faster-growing nineteenth cen-

tury cities like Boston, New York, or Philadelphia led to the establishment of events to attract former residents to revisit their hometown. What these men and women found on their returns in 1853 and 1873 was a small commercial and manufacturing city still building ships and engaged in maritime trade. But new factories now wove textiles, and the local economy was soon to be dominated by breweries.

By the turn of the century, only the U.S. Naval Shipyard across the Piscataqua River continued to launch new ships. (Both World Wars required governmental support to create new industrial housing in Portsmouth to sustain or expand this sector of the economy.) But in Portsmouth and along the nearby towns of the Piscataqua River successful urbanites began to re-acquire their old family homesteads, bought an old colonial house or built a new one along the water as a summer retreat.

The social landscapes of the summer resident, the shipyard or brewery worker, the city's prostitutes, and the commercial or professional middle class are the subject of our tours. New England's small seaport cities, like their homes and other buildings, are layered artifacts. The compact urban core was designed to be a walking city, and its variety of old buildings is best seen on foot and in small numbers. Thus, rather than bus loads to a few sites, Thursday's tours will provide access to several neighborhoods and many, many buildings. Colonial and early nineteenth century neighborhoods will be available in the morning, and in the afternoon we'll explore later industrial and middle class neighborhoods. The day will end with a harbor and river tour with a traditional clam bake on board. Friday bus tours will explore the periphery: late nineteenth century tourism and a range of twentieth century housing.

Registration, an introduction and reception at the Sheraton Portsmouth will begin on Wednesday, May 13, followed by walking and bus tours on Thursday and Friday, while Saturday will be the day for formal paper presentations. On Sunday a tour to visit the 1675-1700 First-Period Spencer-Pierce-Little House in Newbury, MA, is planned.

Richard Candee
York, ME

New Publication

Connecticut's Historic Highway Bridges

by Bruce Clouette
and Mathew Roth

This is a recent publication of the Connecticut Department of Transportation. The book contains a history of bridge building in the state, descriptions of significant highway bridges, and case studies of how the Department has successfully preserved historic spans.

Connecticut's Historic Highway Bridges is a product of the Department's Historic Bridge Inventory, a project undertaken in cooperation with the Federal Highway Administration and the Connecticut Historical Commission. It identified historic bridges in the state and strategies for their preservation. The book and the Historic Bridge Inventory are evidence of the Department's continuing commitment to the state's past, while providing safe and efficient transportation.

Additional copies of this publication, as well as writing to the Office of Environmental Planning, Connecticut Department of Transportation, 24 Wolcott Hill Road, Wethersfield, CT 06109.