

# PROGRAM

## The Twentieth Annual Conference on New England Industrial Archeology

Saturday, February 23, 2008

Boyd Science Center, Plymouth State University, Plymouth, New Hampshire

### Morning Program

**9:30 am**

David Coughlin  
*Northern New England Chapter President's Welcome*

Sara Jayne Steen, President of Plymouth State University  
*A greeting to conference presenters and attendees*

**9:45 am**

Michael D. Green  
*Integrating Industrial History Into a Town Park*

Paper with a focus on the industrial history and cultural significance of the Whetstone Brook in East Killingly, CT. The Whetstone Brook drops almost 200 feet over a distance of four miles as it flows west from the Rhode Island to join the Five Mile River near Interstate 395. As early as 1811 a carding machine was housed in a converted grist mill at the first significant vertical drop along the stream, and by the end of the 19th century as many as 15 small "Rhode Island System" mills had been in operation along the length of the stream. The extant mills and today's adaptive reuse of existing mills will be described.

**10:15 am**

Hope E. Luhman  
*Bridging Past, Present, and Future: Public Outreach and the George Clinton Kingston-Rhinecliff Bridge*

The New York State Bridge Authority (NYSBA) proposed the emplacement of an educational kiosk in association with the Kingston-Rhinecliff Bridge Bulkhead, Ramp & Access Road Project to educate the visitor about local history by focusing on the once dominant brick industry that flourished in the vicinity of the proposed boat ramp and access road. The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) concurred, and the results are now on display for the public in three panels inserted in a free-standing kiosk, erected by the NYSBA at Charles Ryder Park in the Town of Ulster along the western shore of the Hudson River.

**10:45 am, Refreshment Break**

**11:00 AM**

Craig Austin  
*Eight Industrial Locations to Visit in the Boston Area*

The eight sites in this presentation are: the Saugus Iron Works National Historic Park, in Saugus; the Lowell textile mills and canals, in Lowell; the former United Shoe Machinery Corporation (USMC) factory complex, in Beverly; the Boston Manufacturing Company factory complex, in Waltham; the Quincy Quarries Railroad in Quincy; the Old Schwamb Mill, in Arlington; the Essex Shipyard and Shipbuilding Museum, in Essex; and the Plymouth Cordage Company mill complex, in Plymouth.

**11:30 am**

Peter H. Stott  
*A Survey of Industrial Archeology in Columbia County, New York*

The presentation will touch on some of the significant findings of the study that has resulted in a new book by the presenter (published by the Columbia County Historical Society - distributed by Syracuse University Press) on the industrial archeology of a Hudson River county in New York State. The book is a model approach for combining a traditional IA guide with a narrative history extending from geologic time to the present, and, in some ways, can be seen as an artifact of the earlier surveys undertaken by the Historic American Engineering Record.

**Noon**

Richard Candee  
*American Textile History Museum Update*

A brief summary of the American Textile History Museum's success in relocating its large machine collection and the state of its revived museum exhibits.

**12:10 pm, Lunch Break**

### Afternoon Program

**1:30 pm**

Thomas Raphael  
*Middlesex Canal Restoration Plans*

The Middlesex Canal, connecting the Merrimack River with the waters of Boston harbor, built between 1793 - 1803, was abandoned in 1859 due to railroad competition. The 27-1/4-mile long, 4-1/2-foot deep, earthen canal was easily filled and built-over. Today 12 miles of intact segments of the canal remain. The Middlesex Canal Commission was formed to "return the canal to public use." The first preservation and reconstruction project is now at the 25% design stage and has the funds to complete the permitting and design, and start construction.

**2:00 pm**

John J. Daly  
*The Maynard Ammunition Sub-Depot, Maynard, Massachusetts*

This paper relates the Maynard Ammunition Sub-Depot (a national defense facility constructed in Maynard, Hudson, Stow, and Sudbury, Massachusetts in 1942) contains 50 ammunition magazines, as well as a service road, railroad beds, and a Guard Station that were all constructed by the Army. Various pre-war residences and roadways were also retained within the complex. The paper explores ways in which military design standards for explosives storage were adapted to the peculiarities of the local landscape and characterizes specific adaptations of residential construction for military use found at the installation.

**2:30 pm**

Nelson H. Lawry  
*The Industrial Remnants of Fortress Corregidor, Philippines*

Fort Mills, which occupies the entirety of Corregidor Island—a part of the large volcanic caldera in Manila Bay—was very likely the only true fortress built and maintained by the United States. In addition to its 13 harbor defense (HD) batteries, two searchlight defense batteries, and five anti-aircraft batteries, the complex contained many supporting facilities, including a coal-fired steam powerhouse and a directly adjacent cold storage plant protected by an earth-topped ("bombproof") structure. After a quick overview of the tactical elements of Fort Mills, the remainder of the talk will focus on these three structures.

**3:00 pm**

David Switzer  
*From Astride a Log to Walking a Deck: Evolution of the Shipbuilding Craft from 4000BC to the 1500's AD*

There is archeological evidence that seafaring predated the agricultural revolution or the Neolithic Period. This presentation will trace the evolution of early shipbuilding in the Mediterranean and Atlantic through nautical archeological discoveries, various contemporary depictions of vessel types, and evidence of the evolving shipwright's trade that produced, until the Industrial Revolution of the 18th century, the most complicated machines the western world had seen.

# Presenters' Abstracts and Biographies

Michael D. Green

*Integrating Industrial History Into a Town Park*

## Abstract

This talk will describe the industrial history and cultural significance of the Whetstone Brook in East Killingly in the Northeast Connecticut. The Whetstone Brook drops almost 200 feet over a distance of four miles as it flows west from the Rhode Island state line to join the Five Mile River near Interstate 395. As early as 1811 a carding machine was housed in a converted grist mill at the first significant vertical drop along the stream, and by the end of the 19th century as many as 15 small "Rhode Island System" mills had been in operation along the length of the stream. The talk will describe both the extant mills and today's adaptive reuse of existing mills. In addition, the talk will discuss the Providence to Danielson electric trolley that ran through this region from 1903 to 1921.

Special emphasis will be given to the Cat Hollow property which was recently acquired by the Town of Killingly and is being developed as a town park. The 10-acre property contains three dams, two mill sites, and remnants of the electric trolley system. Landscape architecture students at the University of Connecticut studied Cat Hollow and incorporated the industrial history of the site into designs ideas for a park. A partnership between town government, local volunteers, developers, and university faculty and students resulted in a final design that highlights the site's industrial heritage while meeting the needs of local citizens and an adjacent over-55 community.

## Biography

Michael Green studied Mechanical Engineering at Brunel University in West London and came to the US in 1980 to pursue graduate studies at the University of Florida. Today he is a technical writer for the Abaqus engineering software company that is housed in the renovated Rising Sun Mill complex in Olneyville, Providence, RI. Mr. Green has lived in East Killingly, CT since 1994 and has developed an interest in the industrial history of the region. He has helped develop guided walks along the Whetstone Brook and at other sites in Killingly with an industrial heritage. He is active in conservation issues in Northeast Connecticut and is a board member of the Wyndham Land Trust.

Hope E. Luhman

*Bridging Past, Present, and Future: Public Outreach and the George Clinton Kingston-Rhinecliff Bridge*

## Abstract

As part of their ongoing commitment to local communities, the New York State Bridge Authority (NYSBA) proposed the emplacement of an educational kiosk in association with the Kingston-Rhinecliff Bridge Bulkhead, Ramp & Access Road Project. The planned kiosk was expected to educate the visitor about local history by focusing on the once dominant brick industry that flourished in the vicinity of the proposed boat ramp and access road. The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) concurred with this approach as a creative mitigation activity for which documentary research and

informant interviews would yield an entertaining and educational historical storyline. The results are now on display for the public in three panels inserted in a free-standing kiosk, erected by the NYSBA at Charles Ryder Park in the Town of Ulster along the western shore of the Hudson River. This paper presents the public outreach project that weaves together the proposed bridge project, the industry, and its people.

## Biography

Hope E. Luhman, Ph.D., RPA, Assistant Director - Cultural Resources

THE Louis Berger Group, Inc., 20 Corporate Woods Blvd., Albany, New York 12211

Craig Austin

*Eight Industrial Locations to Visit in the Boston Area*

## Abstract

Throughout the Boston metropolitan area, buildings, collections and artifacts still remain as testimonies of past industrial and transportation activity. Of the hundreds of sites within eastern Massachusetts, there are a few that stand out as a "must see" for those interested in industrial history. The sites discussed here were selected based on: the amount of physical remains such as buildings, dams, and machinery at the original location; accessibility to that site; exhibits or signs at or near the location; recognition by historical or professional societies of its importance; and uniqueness of a site compared to others chosen. The eight sites in this presentation, found all over eastern Massachusetts, are: the Saugus Iron Works National Historic Park, in Saugus; the Lowell textile mills and canals, in Lowell; the former United Shoe Machinery Corporation (USMC) factory complex, in Beverly; the Boston Manufacturing Company factory complex, in Waltham; the Quincy Quarries Railroad in Quincy; the Old Schwamb Mill, in Arlington; the Essex Shipyard and Shipbuilding Museum, in Essex; and the Plymouth Cordage Company mill complex, in Plymouth. Several other sites not included in this listing would also have been good examples. Many more important sites, however, remain with little effort done to preserve or document them. One way to help is by volunteering with a professional society or a local historical organization.

## Biography

Craig Austin has over 10 years experience in mechanical engineering and over 5 in technical writing. Currently, he is a systems analyst for a company that provides engineering and communications services for the Volpe National Transportation Systems Center. Though he has been interested in manufacturing and history for most of his life, for the past 5 years, he has been investigating, primarily in eastern Massachusetts, all sites, collections, and artifacts of interest to mechanical engineers, and has headed up the Boston Section History and Heritage Committee of the American Society of Mechanical Engineers. Within the past two years he has conducted presentations on engineering things to see in the Boston area, industry along the entire Charles River, and a 'then and now' comparison of locations around the Charles River basin.

Peter H. Stott  
*A Survey of Industrial Archeology in Columbia County,  
New York*

**Abstract**

After a long hiatus, a new book on the industrial archeology of a Hudson River county in New York State has recently been published by the Columbia County Historical Society (distributed by Syracuse University Press). The book is the product of the author's 16-month residency in the county in 1989-90, examining the history and surviving artifacts of its industrial and engineering history. Using 134 sites scattered across the county's 18 towns and the city of Hudson, the author weaves a group of narrative histories linking the evidence of the landscape with the underlying economic and social history of each community. Each town narrative is accompanied by individual site descriptions, which can be used as an on-site guide to local history.

The presentation will touch on some of the significant findings of the study, but it will also discuss the structure of the book, which the author saw as a model approach for combining a traditional IA guide with a narrative history extending from geologic time to the present. The book in some ways can be seen as an artifact of the earlier surveys undertaken by the Historic American Engineering Record. This presentation will touch on the book's genesis in the HAER Surveys of the 1970s, as well as in the Statewide Reconnaissance Survey undertaken by the Massachusetts Historical Commission in the 1980s.

Today, online tools of investigation, especially in mapping and in satellite and aerial observation, not available in 1990, can add immeasurably to the process of identification, mapping and research, and the presentation will also touch briefly on the use of some of these tools -- retrospectively applied to the study of IA in Columbia County.

**Biography**

Peter H. Stott, a long-time Southern-New England Chapter member, is an industrial historian with twenty years experience in New York and New England. He is the author of *A Guide to the Industrial Archeology of Boston Proper* prepared in 1984 for the SIA's 13th Annual Conference in Boston. From 1996-2006 Mr. Stott worked with UNESCO's World Heritage Centre in Paris, before returning last year to his roots in New England, where he is currently at work again with the Massachusetts Historical Commission.

Thomas Raphael  
*Middlesex Canal Restoration Plans*

**Abstract**

The 27 1/4 mile Middlesex Canal, connecting the Merrimack River with the waters of Boston harbor, built between 1793 - 1803 by prominent Boston business leaders, was a major factor in the growth of Boston as a important city and port.

Abandoned in 1859 because of the competition by the Boston and Lowell Railroad, the 4 1/2 foot deep earthen canal was easily filled and built-over. Surprisingly, today, there remain 12 miles of intact segments of the canal.

The Middlesex Canal Commission was formed to "return the canal to public use". The first preservation and reconstruction project is now at the 25% design stage and has the funds to complete the permitting and design, and start construction.

The Commission Chairman will explain its operation and show the Phase I Mill Pond/ Canal Park concept plans.

**Biography**

Mr. Raphael, an industrial research and development chemist, was born in Somerville MA. and graduated from Somerville High School in 1940. He graduated early from Harvard in 1943 due to WWII, received a commission in the U. S Navy and was sent to the University of Chicago for training in meteorology, oceanography and nautical astronomy. He served as staff weather advisor to the Naval Air Transport Command at Pawtuxent River Naval Air Station until 1946.

He then returned to his field of industrial chemistry and was a divisional research director at Dewey and Almy Chemical Company, Research Group Leader at Arthur D. Little Inc. and Senior Technical Manager at Polaroid where he was responsible for the improved Polacolor 2 film. He was also responsible for the application of Polaroid products in passports and secure photographic identification cards, represented the United States as chief delegate to the International Standards Organization in Geneva Switzerland. Retiring in 1985, he spent five years running Security of Identification Seminars for ISO.

He then became interested in industrial archaeology and consequently the Middlesex Canal which had run through his home city of Somerville and town of Winchester, where he lives. He joined the Board of the Middlesex Canal Association and In 1995 he was elected Chairman of the Executive committee of the Middlesex Canal Commission.

John J. Daly

*The Maynard Ammunition Sub-Depot, Maynard, Massachusetts*

**Abstract**

The Maynard Ammunition Sub-Depot is a national defense facility constructed in Maynard, Hudson, Stow, and Sudbury, Massachusetts in 1942 as part of the World War II Army Ordnance Department supply chain for war materiel. The Maynard installation contains 50 ammunition magazines, or igloos, as well as a service road, railroad beds, and a Guard Station that were all constructed by the Army. Various pre-war residences and roadways were also retained within the complex.

Army ammunition depots from the World War II period were the result of the Ordnance Department's need to rationalize the production, storage, and shipment of hazardous war materiel manufactured in enormous and unprecedented quantities. This paper relates the Maynard Ammunitions Sub-Depot to its World War II context and to the evolution of Ordnance Department installation design. The paper explores ways in which military design standards for explosives storage were adapted to the peculiarities of the local landscape and characterizes specific adaptations of residential construction for military use found at the installation. Adaptations of the installation for Cold War research purposes are also reviewed.

Materials presented in this paper were compiled in the course of a PAL (Public Archaeology Laboratory, Inc.) Historic American Building Survey (HABS) documentation of the Maynard Ammunitions Sub-Depot. The documentation was funded by the United States Fish and Wildlife Service as mitigation for a proposed project at the complex.

John J. Daly is currently employed at PAL (Public Archaeology Laboratory, Inc.) in Pawtucket, Rhode Island. As an Industrial Historian, Mr. Daly specializes in rehabilitation tax credit applications, Section 106 review, state and federal documentation, and interpretive presentations for historic industrial buildings, structures, and landscapes.

### **Biography**

Mr. Daly has been involved in the fields of historic preservation and public history for over eight years. Prior to joining PAL in 2006, Mr. Daly worked for Oakfield Research as a consultant documenting historic landscapes and architecture for public history organizations and state-level surveys. Mr. Daly has also completed historic landscape documentation for Historic New England and The Trustees of Reservations. Mr. Daly received his MA in Museum Studies in the Department of American Civilization at Brown University in 2004, where he focused on the research, interpretation, and preservation of historic industrial landscapes from an interdisciplinary perspective. He received a B.F.A from the University of New Hampshire in 1999.

Mr. Daly is a member of the Society for Industrial Archaeology.

### **Nelson H. Lawry**

#### ***The Industrial Remnants of Fortress Corregidor, Philippines***

#### **Abstract**

Fort Mills, which occupies the entirety of Corregidor Island—a part of the large volcanic caldera in Manila Bay—was very likely the only true fortress built and maintained by the United States. In addition to its 13 harbor defense (HD) batteries, two searchlight defense batteries, five antiaircraft batteries, a rather large number of land defense batteries, and numerous fire control stations directing the major batteries, the fortress contained a large number of barracks and storehouses, a hospital, other ancillary structures, a narrow gauge railroad, a long concrete tunnel, and at least four native barrios. Within Pumhouse (a.k.a. Powerhouse) Ravine stand the remnants of a long, earth-topped (“bombproof”) structure housing a coal-fired steam powerhouse and a directly adjacent cold storage plant, both dating from the first two decades of the 20th century. Beyond them, along the ravine, is located a 1930s oil-fired diesel power plant. All three of these structures were adversely impacted by the Japanese siege of April–May 1942. After a quick overview of the tactical elements of Fort Mills, the remainder of the talk will focus on these three structures in Powerhouse Ravine.

#### **Biography**

Nelson H. Lawry holds a Ph.D. in cell biology and electron microscopy, City University of New York. He is first author of Lawry et al., Portsmouth Harbor's Military and Naval Heritage (Arcadia), has been a newspaper columnist, has written many magazine articles and journal papers, and continues to write on New Hampshire history and the history of technology. Lawry is a charter member of the Coast Defense Study Group.

### **David Switzer**

#### ***From Astride a Log to Walking a Deck: Evolution of the Shipbuilding Craft from 4000BC to the 1500's AD***

#### **Abstract**

I thought it might be interesting to take a glimpse at ancient Mediterranean water travel from 4000 BC down to Roman world when ships propelled by sail or oars became the most complicated machines and set the scene for the next set of “machines” the dominated the Atlantic world in the 15th and 16th centuries.

There is archaeological evidence that seafaring predated the agricultural revolution or the Neolithic Period. This presentation will trace the evolution of early shipbuilding in the Mediterranean and Atlantic through nautical archaeological discoveries, various contemporary depictions of vessel types, and evidence of the evolving shipwright's trade that produced, until the Industrial Revolution of the 18th century, the most complicated machines the western world had seen.

#### **Biography**

Dave Switzer, Professor  
Department of Social Scienc, Plymouth State University