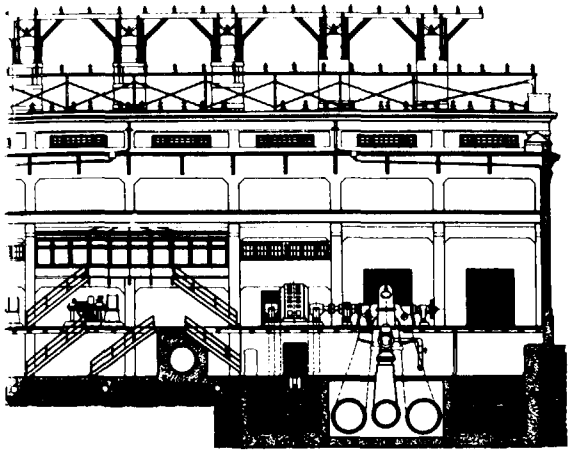
White River Powerhouse in Dieringer, Washington. Stone & was responsible for this 1910 structure. HAER has documented lectric projects over the past twenty years *(Alejandro L. Lauria,*



RELATED FEDERAL PROGRAMS

Other historic preservation programs within the National Park Service include the Historic American Buildings Survey, the National Register of Historic Places, the Interagency Resources Division, the National Historic Landmarks Program, and the Preservation Assistance Division. For further information, write directly to the specific programs at the following address:

National Park Service
P. O. Box 37127
Washington, D.C. 20013-7127

Inquiries on the HAER program may be directed to:

Chief
Historic American Buildings Survey/
Historic American Engineering Record
National Park Service
P. O. Box 37127
Washington, D. C. 20013-7127

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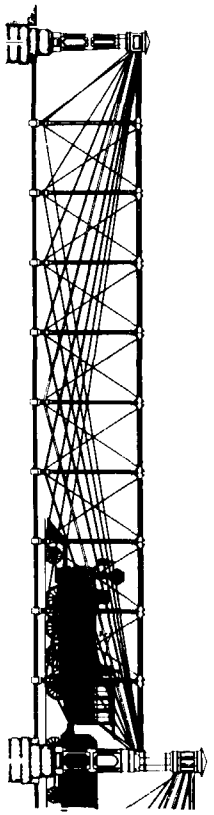

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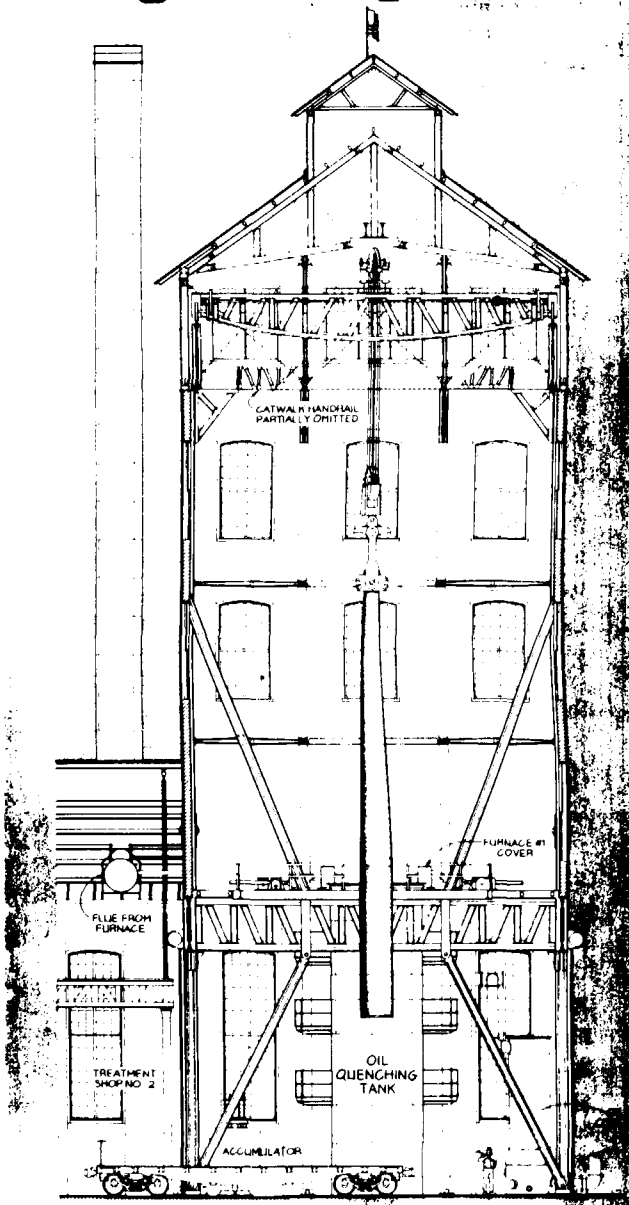
United States Department of the Interior
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

Historic American Engineering Record



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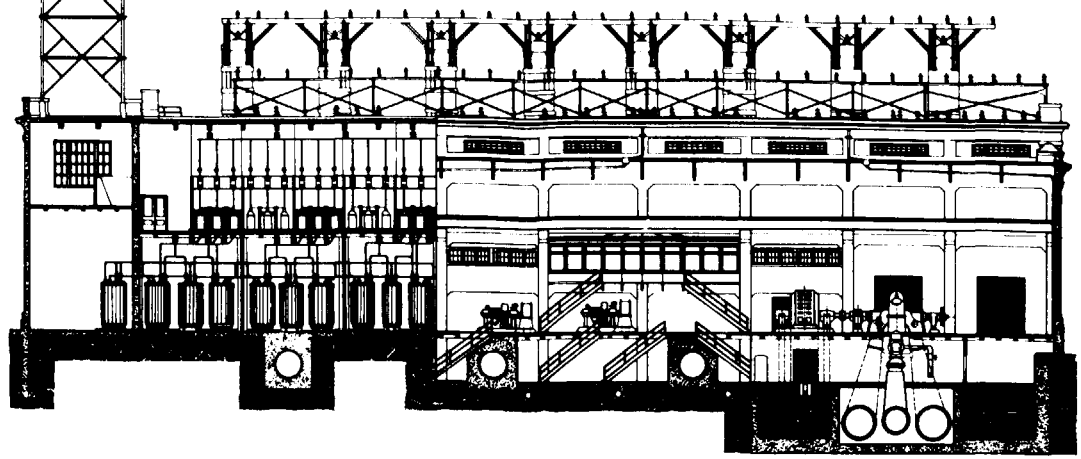
U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



Longitudinal section through the **White River Powerhouse** in Dieringer, ashington. Stone & Webster Engineering Corporation was responsible for this 1910 structure. HAER has documented the nation's most historic hydroelectric projects over the past twenty years *(Alejandro L. Lauria, delineator.)*

THE HAER COLLECTION

HAER has amassed one of the largest written and graphic collections of industrial sites in the world. These records provide information on more than 1,800 buildings, structures, sites, and objects throughout the United States, Puerto Rico, and the U.S. Virgin Islands.

All HAER documentation is edited and reviewed by the Washington staff and then deposited in the Library of Congress where it is available to the public. These records meet strict archival standards, are completely reproducible, and may be ordered through the Library. Reproduced materials may be published without restriction; however, the courtesy of a credit, identifying the delineator, photographer, or author, as well as HAER, is requested. Inquiries may be made to:

Prints and Photographs Division
Library of Congress
Washington, D.C. 20540

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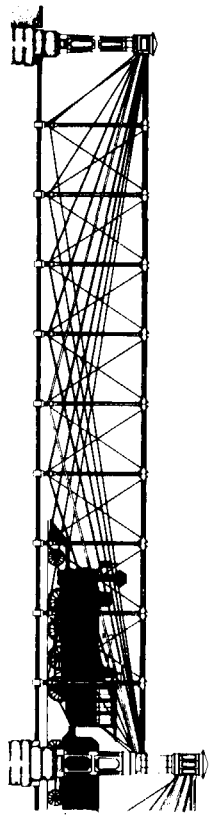

United States Department of the Interior
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

Historic American Engineering Record

America's vast distances, abundant natural resources, and varied climates have fostered an extraordinarily rich and diverse history of technical invention and innovation. The surviving physical structures not only represent this history and testify to the industry, creativity, and imagination of America's engineers and builders, but also vividly illustrate the physical development of the United States and document its technological heritage.

Historians have long recognized the impact of technology on American life, but only recently have preservationists, architects, engineers, and the general public shown an interest in the engineering and industrial heritage of the United States. Despite this increased interest, the survival of historic sites, structures, and objects related to engineering, transportation, and industry is threatened by neglect and technological change.

PRESERVATION THROUGH DOCUMENTATION

To address this problem, the Historic American Engineering Record (HAER) was established in 1969 by a tripartite agreement among the National Park Service, the American Society of Civil Engineers and the Library of Congress. This agreement was later ratified by four other American engineering societies: the American Society of Mechanical Engineers, the Institute of Electrical and Electronic Engineers, the American Institute of Chemical Engineers, and the American Institute of Mining, Metallurgical and Petroleum Engineers.

Bridge 28 is not widely known to engineers because it carries pedestrian rather than vehicular traffic over the bridal path in New York's Central Park. It is one of the earliest cast-iron arches in the United States and is one of five surviving cast-iron arches in Central Park. British-trained architects Calvert Vaux and Jacob Wrey Mould, who worked with landscape architect Frederick Law Olmsted, designed the bridge in 1861 *(photo by Jet Lowe.)*

Under the tripartite agreement, the National Park Service administers the HAER program with funds appropriated by Congress and supplemented by donations from outside sources. The National Park Service sets qualitative standards, organizes and staffs recording projects, and selects sites for documentation. The Library of Congress curates the records, makes them available for study, and provides reproductions to the public. The engineering societies provide professional counsel through their national memberships.

A similar program, the Historic American Buildings Survey (HABS), was established in 1933 to document the nation's historic architecture. Today, it forms a part of the Historic American Buildings Survey/ Historic American Engineering Record Division of the National Park Service, U.S. Department of the Interior.

HAER is twofold—it surveys and documents America's historic industrial, engineering, and transportation resources, and records the working and living conditions of the people associated with them. Staffed with engineers, architects, historians, illustrators, and photographers, HAER conducts a nationwide program of documentation in cooperation with state and local governments, private industry, professional

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Recognizing that many significant technological resources cannot be saved, HAER documents the historic structures and objects through measured and interpretive drawings, large-format photographs, and written data.

Documentation projects may focus on individual sites or objects, such as a bridge, steel works, or a ship; or they may encompass larger systems, such as a railroad, canal, or electrical generation and transmission network.

Highest priority is given to sites of national significance that are in danger of demolition or loss by neglect, as well as National Park Service properties. The primary criterion in selecting sites for documentation is whether the site can reveal information critical to understanding and interpreting the history of engineering, industry, and technology.

Often, sites are selected according to general themes of industry and engineering currently under study, such as hard-rock mining in the West, the nation's historic bridges, or the iron and steel industry. In addition, sites are selected to provide a comprehensive record of particular kinds of technological resources in the HAER collection.

HAER's documentation program makes an important contribution to the study and, when possible, the preservation of America's industrial and engineering heritage. In many cases, HAER's graphic and written documentation may be the only lasting record of this legacy. The HAER program reflects the Federal Government's concern for the destruction of America's industrial and engineering heritage, and the need for a well-informed national assessment as the basis for deciding what should be preserved.

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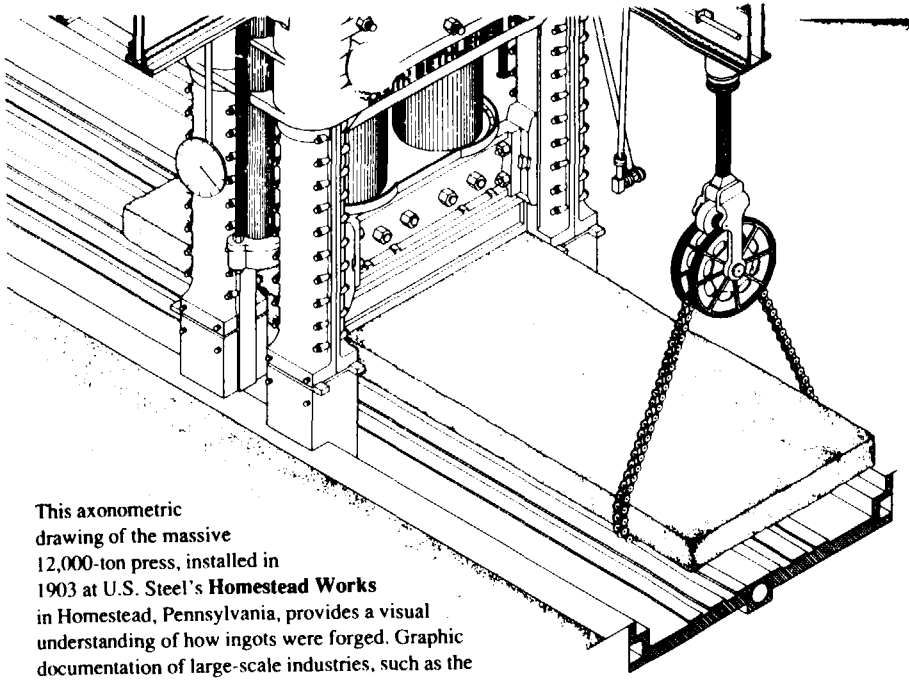
or by funding from the National Park Service and other Federal agencies, which usually become cooperating cosponsors for the project. Memorandums of Agreement are prepared for all HAER projects. These agreements identify project cosponsors, specify the various project tasks and responsibilities of the parties involved, and stipulate deadlines for completing all work.

In addition to developing documentation for the HAER collection, the recording projects are often the basis for restoration of structures, such as the Nassawango Furnace, a stone-constructed blast furnace at Snow Hill, Maryland. Documentation is used to interpret such engineering artifacts as the remains of the 1868 Bollman Bridge spanning the Potomac River at Harpers Ferry, West Virginia. In 1975, HAER documentation of the Sloss Furnaces in Birmingham, Alabama, focused public attention on this threatened site and contributed to its National Historic Landmark designation and to its development as a museum dedicated to the southern iron industry. Similarly, documentation of roads and bridges in Yellowstone National Park coincided with the efforts of the park and region to prepare a historic structures report and a National Register of Historic Places nomination, all of which were part of a road-rehabilitation project.

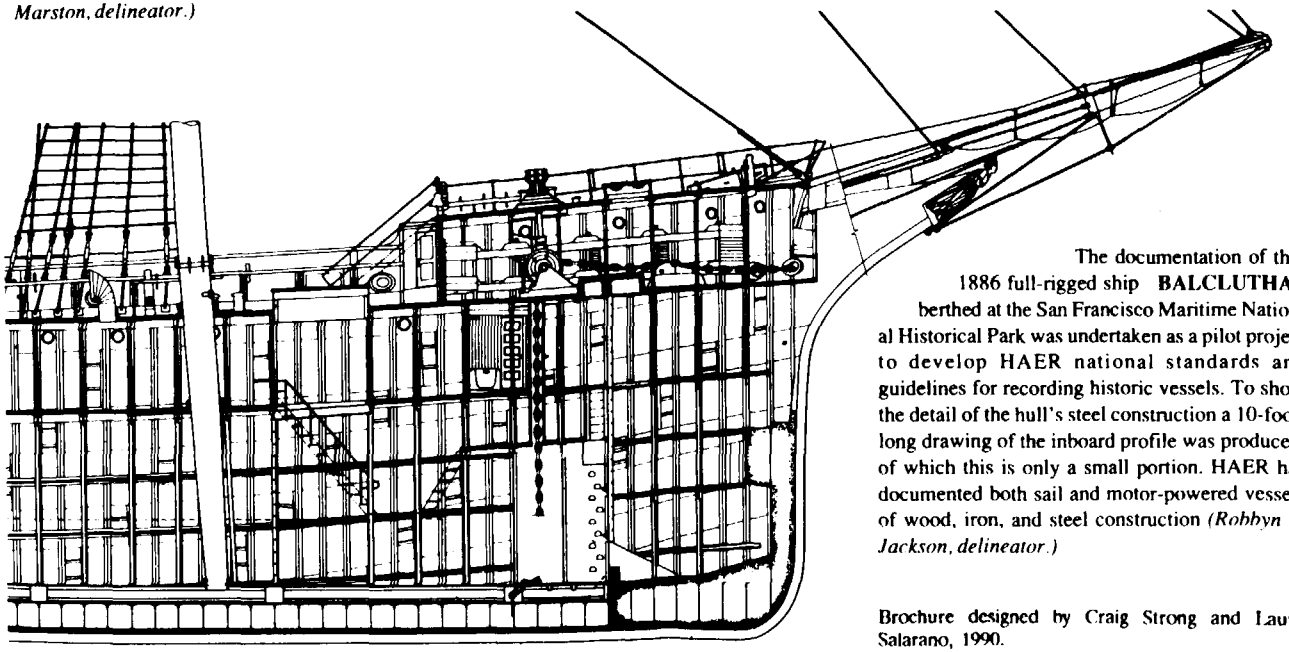
Heritage Areas

In 1984, Congress designated the Illinois and Michigan Canal the first "national heritage corridor." The heritage corridor concept is based on a regional approach to historic, natural and recreational resources, with some aspect of industrial history often the common link uniting the region. The Blackstone River Valley National Heritage Corridor, for example, focuses on the New England textile industry. HAER has been extensively involved with the documentation



This axonometric drawing of the massive 12,000-ton press, installed in 1903 at U.S. Steel's **Homestead Works** in Homestead, Pennsylvania, provides a visual understanding of how ingots were forged. Graphic documentation of large-scale industries, such as the nation's many giant steel works, poses numerous challenges for architects and illustrators *(Christopher Marston, delineator.)*

HAER technicians Lola Bennett, Robert Arzola, Sean O'Reilly, and J. Finbarr Garvey hand-measure the 116-year-old metal-truss **Springfield - Des Arch Bridge,** which survives near Springfield, Arkansas, largely due to its rural location *(photo by Corinne Smith.)*



The documentation of the 1886 full-rigged ship **BALCLUTHA,** berthed at the San Francisco Maritime National Historical Park was undertaken as a pilot project to develop HAER national standards and guidelines for recording historic vessels. To show the detail of the hull's steel construction a 10-foot-long drawing of the inboard profile was produced, of which this is only a small portion. HAER has documented both sail and motor-powered vessels of wood, iron, and steel construction *(Robbyn L. Jackson, delineator.)*

Brochure designed by Craig Strong and Laura Salarano, 1990.

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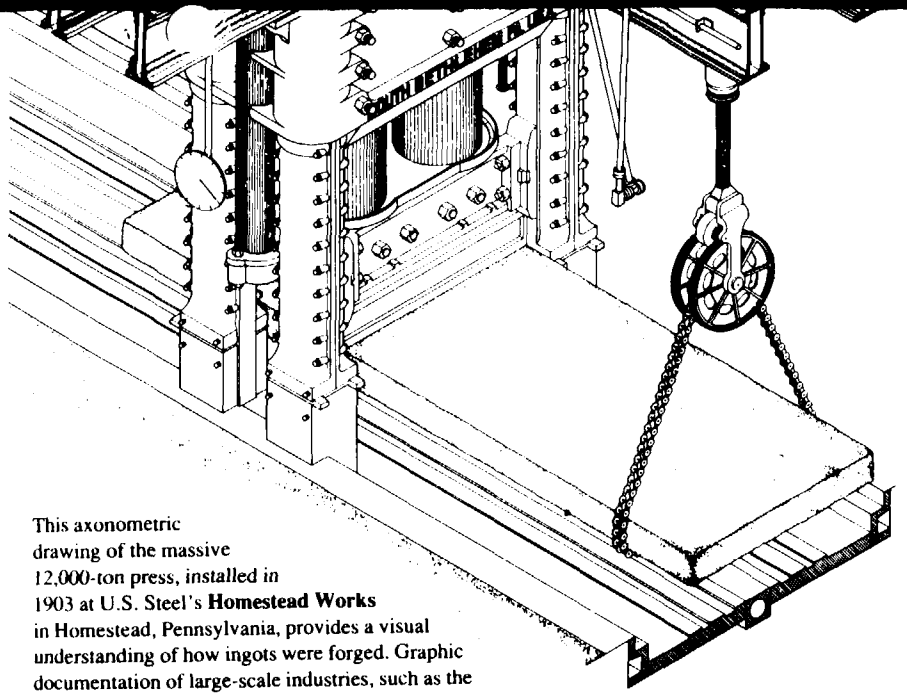
Front cover: **High House** - Bethlehem Steel Corporation, Bethlehem, Pennsylvania *(Scott Clanton, delineator.)*

Back cover: **Bollman Bridge** - Baltimore and Ohio Railroad, Harpers Ferry, West Virginia *(Brian D. Bartholomew, Joanna Downs, Samuel Gaine, delineators.)*



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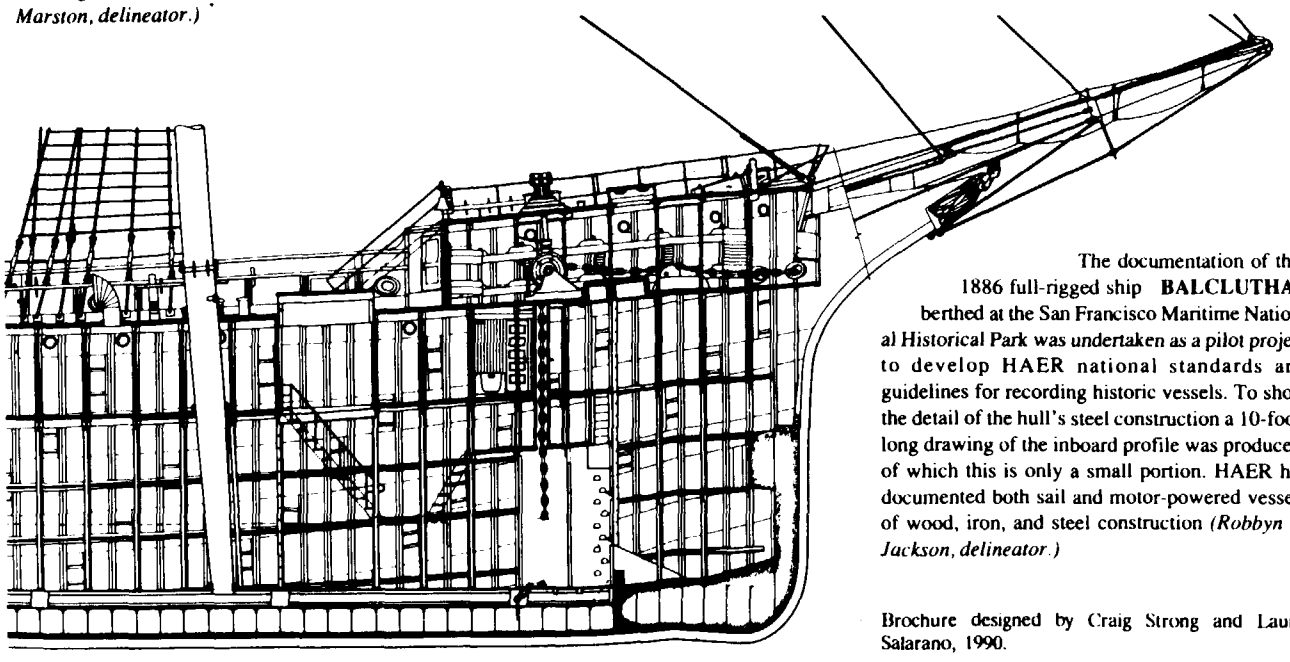

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Donations

Occasionally individuals or groups outside the HAER program document technological resources, producing measured drawings, large-format photographs, and written histories for the HAER collection. This work is then donated to HAER which transmits it to the Library of Congress. Also, HAER has received donations of engineering and technical books from the libraries of individuals interested in donating materials to the HAER collection in the Library of Congress.

PUBLICATIONS

HAER issues guidelines and field instructions for its standards of documentation, as well as information on how to complete the documentation work. In addition, HAER provides indexes and catalogs to existing HAER documentation. Examples of outstanding photographs by HAER photographer Jet Lowe are reproduced in ***The Industrial Eye,*** featuring many of the industrial sites and structures that are included in the HAER collection. Recently, the principal textbook of the HABS/HAER program, ***Recording Historic Structures,*** was published to assist those interested in preparing documentation to HABS/HAER standards. A complete list of HAER publications is available from the Washington office.

In 1983, the Library of Congress published ***Historic America: Buildings, Structures, and Sites,*** a comprehensive list of HAER and HABS documentation accessioned in the collection up to January 1, 1982. Shortly thereafter, the ***HAER Checklist: 1969-1985*** was issued as a research guide.

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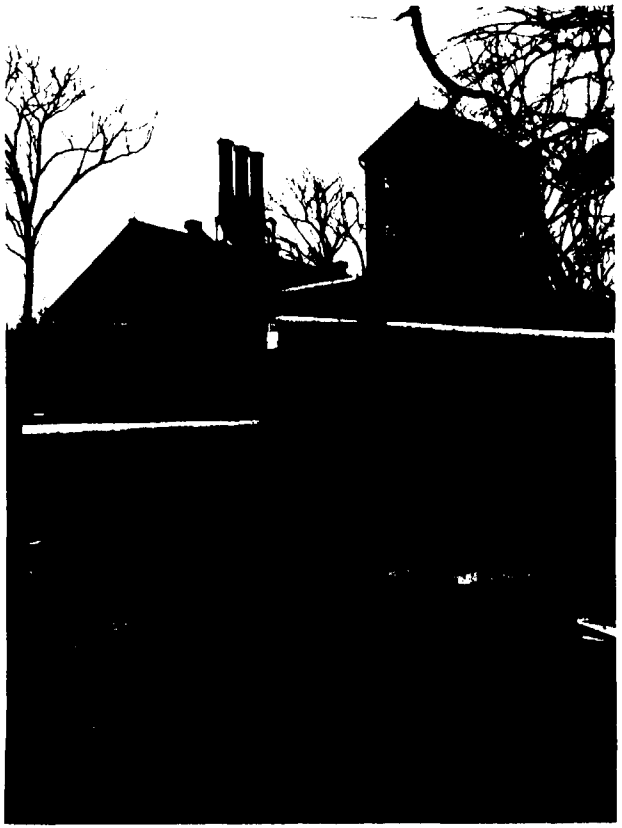
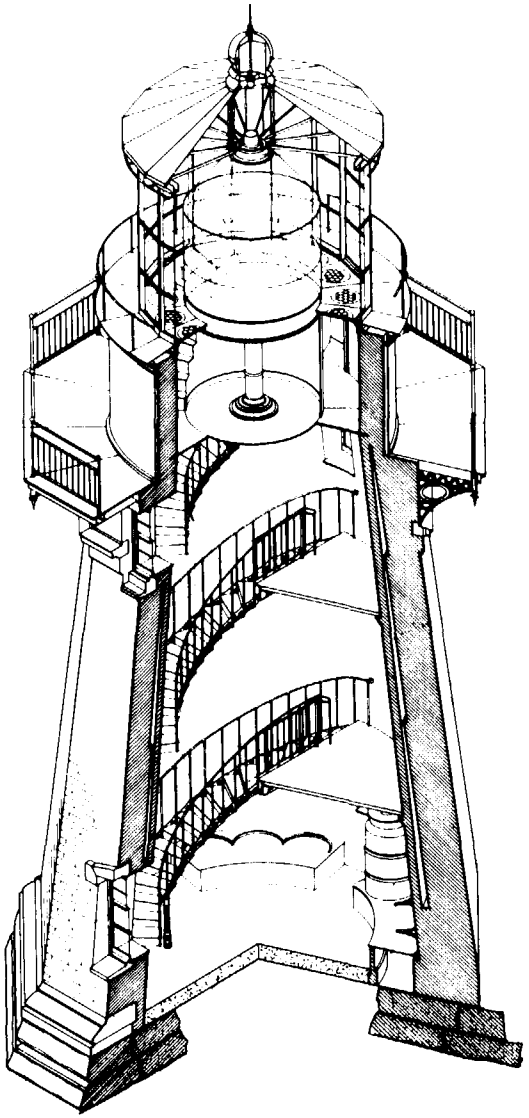
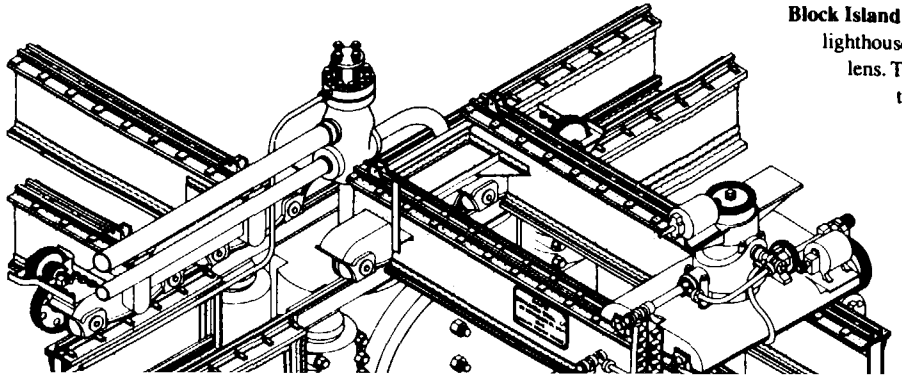


Building No. 519 of the **Picatinny Arsenal** in New Jersey, was used to recover ether and alcohol vapors produced in the manufacturing of gunpowder. HAER documented the process through large-format photographs and interpretive drawings *(photo by Jet Lowe.)*



Block Island Southeast Light (1873), is one of only nine U.S. lighthouses still employing a nineteenth-century Fresnel lens. This pilot project, designed in part to commemorate the bicentennial of the U.S. Coast Guard, provided a model on which to base future lighthouse recording projects *(Lee Ann Jackson, Isabel C. Yang, delineators.)*



of historic industrial resources in heritage areas, such as in the Blackstone River Valley, and has conducted multi-year projects in the Illinois and Michigan Canal and Delaware and Lehigh Navigation Canal areas, and for America's Industrial Heritage Project in south-central Pennsylvania. Similar efforts by HAER have been initiated in Pittsburgh, PA and Birmingham, AL. Multi-year (and year-round) projects allow HAER to document sites more thoroughly and to better place the industrial resources in a national and regional context.

HAER Maritime Program

Nationwide interest in the preservation of large historic ships has grown substantially in recent years. Since 1985, HAER has documented historic vessels, such as *Balclutha, Ticonderoga* and *Eureka.* As a result of this new direction, HAER published ***Guidelines for Recording Historic Ships*** in 1989.

Mitigative Documentation

Under the provisions of the amended National Historic Preservation Act of 1966, Federal agencies must produce mitigative documentation to HABS/HAER standards for structures that are listed, or eligible for listing, in the National Register of Historic Places, and are threatened with demolition or substantial alteration by Federal action. Throughout the United States, numerous nineteenth-century bridges, rendered obsolete by modern highway demands, have been documented for HAER as part of this mandated program. The HAER mitigation program is administered by five of the regional offices of the National Park Service: Alaska (Anchorage), Mid-Atlantic (Philadelphia), Rocky Mountain (Denver),

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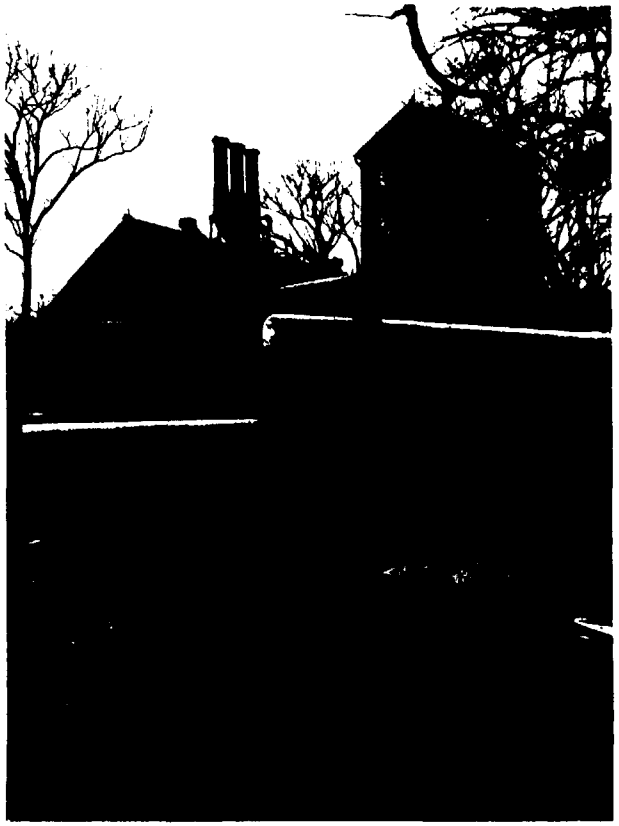
DOCUMENTATION PROGRAMS

Most of the HAER collection is generated by summer recording projects. An increasingly abundant source of documentation is mitigative documentation, developed by Federal agencies in compliance with the National Historic Preservation Act of 1966, as amended. Additional documentation programs include National Heritage area projects and a new initiative, the maritime documentation program, to record floating vessels and other nautical or maritime-related resources.

Most recording projects are initiated and directed by the HAER Washington office. Field teams are staffed with professional and student historians, architects, architectural technicians, engineers, illustrators, and photographers. Historians and engineers use primary and secondary sources to write historical and technical reports. Architects, architectural technicians, and illustrators produce measured drawings and interpretive drawings. Photographers, using large-format equipment, provide a photographic record of the technological resources.

Since 1986, HAER has cosponsored foreign interns through the International Council on Monuments and Sites (ICOMOS). This cooperative effort has brought architects and historians from Europe, the Soviet Union, the Carribean, and South America, to work on documentation projects.



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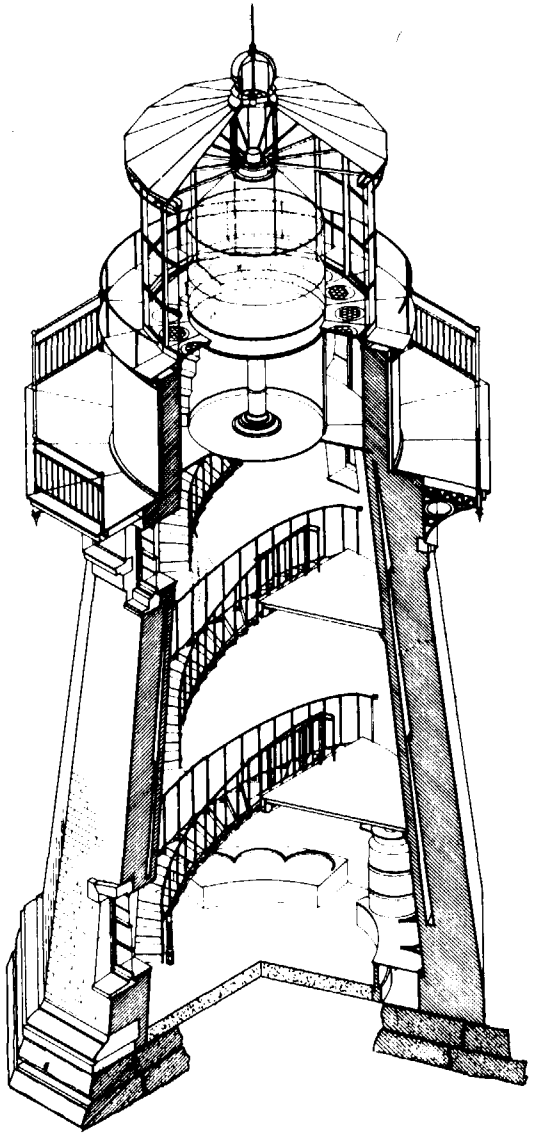

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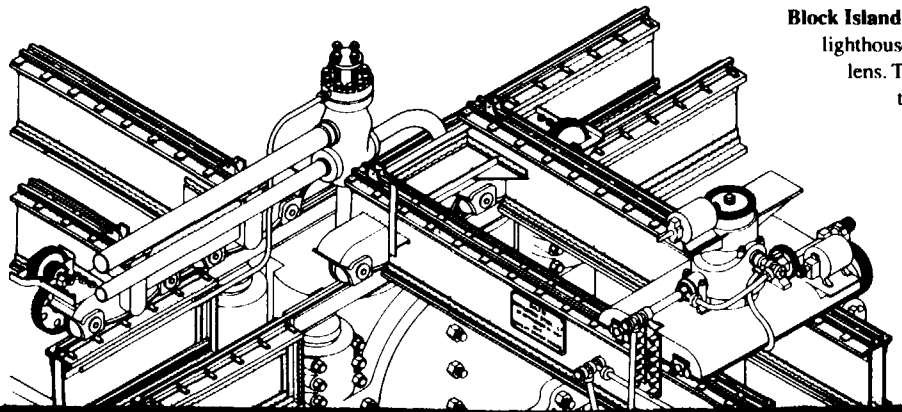

Recording Projects

Recording projects provide in-depth assessments of a specific site or complex through measured drawings, large-format photographs, and written historical and technical reports. HAER recording projects are supported by donations from individuals, historical organzations, or private industry

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