

# HAER and the Recording of Technological Heritage

## Reflections on the Beginning

---

An abundance of industrial and engineering sites still dotted the American landscape in the 1960s, despite the onslaught of “progress” in the form of freeways and urban renewal. America retained a wealth of bridges, dams, canals, factories, power plants, and other engineering and industrial structures of historic interest. Many historic sites maintained by the National Park Service (NPS) and the states reflected engineering or industrial themes.<sup>1</sup> But even though numerous historic sites had survived, preservationists realized that the future held little hope that many objects of engineering and industry could be saved as historic monuments.

Preservation through documentation was a viable alternative, however. The Historic American Engineering Record (HAER) was created in 1969 by the National Park Service, the Library of Congress, and the American Society of Civil Engineers (ASCE) so that documentation on outstanding works of engineering, industry, and technological processes could be preserved.

A number of people working in Washington, DC, in the 1960s were interested in the history of technology and the emerging field of industrial archeology (IA), and were instrumental in helping to create the HAER program. Robert M. Vogel, the curator of Mechanical and Civil Engineering at the National Museum of History and Technology, Smithsonian Institution, was one of them. An early advocate of an engineering documentation program, Vogel had attended some of the first industrial archeology conferences in England. Organized by Kenneth Hudson and Angus Buchanan at Bath University, the establishment of IA as a new field of study was debated. Subsequently, Vogel convened a similar seminar at the Smithsonian on April 11, 1967, to launch the American equivalent of an IA movement, based generally on British practice.<sup>2</sup>

Another key player during these formative years was James C. Massey, chief of the Historic American Buildings Survey (HABS) and the first chief of HAER. In cooperation with the Smithsonian Institution, HABS initiated several recording projects in the late 1960s that varied from its normal focus on historic architecture. Vogel had approached Massey and HABS seeking the help of NPS in recording the Bradway Machine Works in Stafford, Connecticut, and the Dudley Shuttle Works in Wilkinsonville, Massachusetts. Along with students from the University of Maryland’s College of Engineering, in 1966 he recorded the Bollman Bridge at Savage, Maryland. This project brought in the ASCE because, simultaneous with the recording, the bridge was designated as the first ASCE national historic civil engineering landmark.

Also actively working for recognition of engineering heritage at the time was Neal FitzSimons, an engineer in the senior executive service responsible for the protective structures program of the Pentagon. Since engineering school at Cornell, FitzSimons had been interested in the history of civil engineering and, after moving to Washington, worked to establish a program on the history of civil engineering within the ASCE. FitzSimons was appointed to a Task Committee to study his proposal and, in the spring of 1965, the Board of Direction approved the establishment of a permanent Committee on the History & Heritage of American Civil Engineering (CHHACE) chaired by past president Gail Hathaway. Shortly after CHHACE was formed, Hathaway and FitzSimons began discussions with the NPS and the Library of Congress to establish an engineering documentation program.<sup>3</sup>

On October 3, 1967, in a meeting with Massey and NPS associate director of design and construction Johannes E.N. Jensen, Gail Hathaway formally presented FitzSimons’ pro-

posal for the establishment of a new program to record historic engineering works as a cooperative venture with ASCE. The proposal fell on sympathetic ears, since Massey had a personal interest in industrial architecture, and, over the previous few years, had promoted HABS recording of textile mills and small industries in collaboration with Vogel and the Smithsonian. Before going along with the idea, however, Park Service Director George B. Hartzog, Jr. wanted to ensure that the program not duplicate the work of HABS, and that other disciplines, such as landscape architecture, would not seek similar treatment. In response, Ernest A. Connally, director of the recently established Office of Archeology and Historic Preservation and Massey's boss, got assurances from Raymond L. Freeman, a prominent Washington landscape architect and NPS official, and from Gail Hathaway that there would be no pressure for the establishment of

*HAER team members David Bouse and Charles Parrott ascend a hook-and-ladder to measure the cornice of the Troy (NY) Gasholder house in 1969. Photo by Robert Vogel, 1969.*



similar programs from the landscape architects or the other engineering disciplines.

With strong advocates for an engineering documentation program within the Park Service hierarchy, a tri-partite agreement to establish HAER was ratified on January 10, 1969, with the signing of a document similar to the one that established HABS in 1933.<sup>4</sup> Securing funding for the new HAER program was the next step. Congressman George Mahon (D-TX) of Lubbock, chairman of the House Appropriations Committee, made certain that the \$79,000 line item for HAER was in the NPS fiscal year 1970 budget. Success in securing the appropriation was due in no small part to Jerry Rogers, who had worked with Ernest Connally to help set up the National Register of Historic Places. Like Connally, Rogers was a Texan who recently had returned to Texas to start a new museum of western ranching history at Texas Tech in Lubbock.<sup>5</sup>

During the summer of 1970, R. Carole Huberman was hired as the first HAER Washington office employee, followed by architect Donald G. Prycer who worked on HAER's Commonwealth of Virginia recording project that same summer. Eric DeLony, hired in January 1971, was the first permanent employee, and Douglas L. Griffin, an industrial engineer from Neal FitzSimon's office at the Pentagon, was HAER's first supervisor beginning in May 1971.

The Mohawk-Hudson Area Survey conducted during the summer of 1969, and headquartered at Rensselaer Polytechnic Institute in Troy, New York, was HAER's first official project. Unlike traditional HABS surveys which treated mills primarily as architectural phenomena, the Mohawk-Hudson Survey devoted as much attention to the machinery and the industrial processes as to the architecture. The Mohawk-Hudson Survey, done in collaboration with the Smithsonian, was intended as a demonstration project, a pioneer endeavor in historical research integrating engineering history, local history, and landmark preservation studies into a single research and recording operation. Following the success of the Mohawk-Hudson Survey, a project was fielded during the next summer to record the Baltimore & Ohio Railroad, investigating the historic remains of America's first major trunkline, and another to document a selection of industrial and engineering sites in Virginia.



*Documentation of the Erie Railroad in 1971 required aerial reconnaissance. The intrepid air team included, left to right, Jack Boucher, Eric DeLony, Chester Liebs, Jack Waite, Robert Vogel, and pilots Anthony Hill and Jack Colborn. Photo by Jack Boucher, 1971.*

Since then, HAER has worked to create a national archive of America's industrial, engineering, and technological achievements. In its first 30 years, over 7,000 sites, structures, and objects have been recorded with over 65,000 photographs, 800 large-format color transparencies, 54,000 data pages, and 3,000 sheets of measured and interpretive drawings, all transmitted to the Library of Congress. Some of the sites recorded serve as the foundation for subsequent preservation efforts that transform communities and the way people think of the industrial work place. Steel mills, factories, foundries, and the canal, road, and rail infrastructure now are beginning to be thoughtfully regarded and preserved with new insights.

Because of its governmental authority and national scope, HAER is recognized as the national standard against which engineering and industrial heritage documentation in the United States is measured. A critical component of the standard is the creation and maintenance of a national archive of records at the Library of Congress.<sup>6</sup> Significantly, HAER's documentation is in the public domain. Materials from the collection can be used without restriction other than the courtesy of a credit line citing the delineator, photographer, or author, and the Historic American Engineering Record, National Park Service. Much as the Smithsonian Institution is referred to as the "nation's attic," the drawings, photographs, and histories that comprise the HAER collection might be considered the

national memory of engineering and industrial achievements. In this context, the process of documentation becomes a powerful tool, and the collection can be appreciated when one realizes that it was designed to last for many generations.

HAER produces documentation with the help of partners. In addition to the support of the NPS, HAER, through its tri-partite agreement, has the backing of two other notable institutions—the Library of Congress and the American Society of Civil Engineers.<sup>7</sup> The groups that cosponsor HAER documentation projects, such as other federal agencies, state and local governments, historical societies, private industry, and individuals, are also considered partners. Donations from these partners augment HAER's annual appropriation from the Congress. Avoiding exclusive reliance on federal funding gives the program great flexibility and makes the role of partners important. Donations and shared funding are based on the premise that all sectors of society (government, business, industry, and individuals) should participate in a national preservation effort. Participation, especially financial, multiplies the effect of the program. More importantly, it encourages partners to recognize the concept of industrial heritage documentation, and by extension, a commitment to preserving significant attributes of the engineered environment.<sup>8</sup>

During its first 30 years, HAER has established national documentation standards, cultivated numerous cooperative relationships with a variety of entities, adopted an entrepreneurial philosophy for greater flexibility, and created an international training and documentation program. Through its federal authority, national standards, summer recording program, and Library of Congress archives, HAER has furthered recognition of the oft-forgotten contributions of engineers, industrialists, and laborers.

#### Notes

<sup>1</sup> By 1969, over 68 engineering, industrial, and maritime sites had been recognized and commemorated as national historic landmarks, as national and state

- parks, or as historic sites. See the Catalog of National Historic Landmarks (Washington, 1987).
- 2 Vogel later directed several early industrial archeology surveys for HABS, including the two New England Textile Mill Surveys. He was project director of the Mohawk-Hudson Area Survey, HAER's pilot project, and continues to support the program to this day. He is mentor to the author. See Robert M. Vogel, *A Report on the Mohawk-Hudson Area Survey* (Smithsonian Institution, Washington, DC, 1973), 1.
  - 3 Hathaway was a prominent Army Corps engineer and a member of the American team that helped save the temples at Abu Simbel on the left bank of the Nile from the reservoir of the Aswan Dam. A few years later he passed the presidency of CHHACE to FitzSimons. See Neal FitzSimons, "History and Heritage Programs of the American Society of Civil Engineers," an unpublished paper, on the formation and the activities of the CHHACE Committee.
  - 4 HABS was established in 1933 as a New Deal project to employ out-of-work architects. Selected engineering works and industrial buildings were recorded during its initial phase and later when the program was reinstated and funded in 1957 as part of the National Park Service's Mission 66, a program designed to upgrade the national parks following the Korean War and World War II.
  - 5 Dr. Connally suggested that had the HAER appropriation been postponed one year, it may not have passed because of the mounting expense of the Vietnam War. Another interesting development surrounding the establishment of HAER was the understanding that in return for Mahon's support, the Water Resources Center at Texas Tech would receive several grants from the Park Service to survey historic engineering and industrial sites in the Southwest. For the results of these surveys, see *Water for the Southwest: Historical Survey and Guide to Historic Sites* (American Society of Civil Engineers, Committee on History & Heritage of

American Civil Engineering; New York, N.Y., 1973). On behalf of ASCE, FitzSimons testified before several Congressional committees in support of establishing HAER.

- 6 See Robert Kapsch, ed., "Secretary of the Interior's Standards & Guidelines for Architectural & Engineering Documentation," *Federal Register*, 48:190, (Thursday, September 29, 1983), 44730-34; and John A. Burns, ed., *Recording Historic Structures* (American Institute of Architects Press: Washington, DC, 1989), for both quality and performance standards. The HAER collection is in the Library of Congress rather than the National Archives, the usual repository for Executive Department records, because there was no National Archives when HABS was created in 1933. The HAER collection was "piggybacked" onto the HABS collection. The National Archives created Record Group 515 in December 1992 to hold the administrative files of HABS/HAER.
- 7 The Tri-partite Agreement, outlining the HAER mandate, was signed in 1969 by the three entities creating the program: the National Park Service, which is charged with the day-to-day operation of the program; the Library of Congress in which the collection is reposed; and the American Society of Civil Engineers, which advises the program and provides support through its national membership. In 1987, support of the program was expanded through a protocol that included the other founding engineering societies: the American Society of Mechanical Engineers; the Institute of Electrical and Electronics Engineers; the American Institute of Chemical Engineers; and the American Institute of Mining, Metallurgical & Petroleum Engineers.
- 8 Courses in the history of science and technology had been taught within the College of History, West Virginia University, since 1976. In 1989, Dr. Emory L. Kemp formalized these curriculum initiatives by establishing the Institute for the History of Technology & Industrial Archaeology (IHTIA), as an affiliate of the West Virginia University Research Corporation. Partially funded through HAER, it offers additional flexibility toward preserving engineering and industrial heritage by working with HAER and the National Park Service to expand the documentation mandate.

Michael Masney on the B&O Roundhouse in Martinsburg, West Virginia, in 1970. Photo by the author, 1970.



Eric DeLony is Chief, Historic American Engineering Record, National Park Service, Washington, DC.

This article was adapted from Eric DeLony, "HAER and the Recording of Technological Heritage: Reflections on 30 Years' Work," *IA: The Journal of the Society for Industrial Archeology* 25, No.1 (1999):5-28, with permission from the publisher.