What are historic engineering and industrial resources? Historic engineering and industrial sites reflect our nation’s rich technological heritage. Every generation of Americans has sought to transform the country’s landscape and utilize its resources by constructing a wide variety of engineering sites like irrigation ditches, canals, roads and bridges, mines, factories, power plants, and water and sewage treatment facilities. In addition to infrastructure, our technological heritage is comprised of innovations in machinery and equipment as well as in the development of modes of transportation. The nation’s historic engineering and industrial sites remind us of our path to the present and provide examples for the future. Most importantly, these sites encapsulate the contributions of every member of our society, evoking the intellect, ingenuity, hard work, and sacrifice of engineers and inventors, workers and businessmen and their families and communities. A permanent record of these tasks and accomplishments ensures that they will remain available for future generations to appreciate and learn from, long after they have been lost or forgotten.

What is happening to our engineering legacy? Unfortunately, our nation’s engineering legacy is subject to loss from many forces, particularly obsolescence through technological advances and development pressures, vandalism, and neglect. Changing regulations governing health, environment, and safety have also contributed to obsolescence, while overseas manufacturing and the adoption of new materials have impacted equipment and manufacturing plants. As a result, our engineering legacy is threatened by processes and pressures that continue to be lost despite increasing interest in adaptive reuse of historic structures.

What should we care about historic engineering sites? Historic engineering and industrial sites are milestones in the history of wrought-iron bridge building: the Whipple-Murphy truss and the Phoenix column. What is the American fascination with and dependence on technology and its implementation? Industrial sites like irrigation ditches, canals, roads and bridges, mines, factories, power plants, and water and sewage treatment facilities. In addition to infrastructure, our technological heritage is comprised of innovations in machinery and equipment as well as in the development of modes of transportation. The nation’s historic engineering and industrial sites remind us of our path to the present and provide examples for the future. Most importantly, these sites encapsulate the contributions of every member of our society, evoking the intellect, ingenuity, hard work, and sacrifice of engineers and inventors, workers and businessmen and their families and communities. A permanent record of these tasks and accomplishments ensures that they will remain available for future generations to appreciate and learn from, long after they have been lost or forgotten.

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HAER Documentation

Since its inception in 1969, HAER documentation has followed the basic format of Historic American Building Survey (HABS) documentation, the program after which it was modeled, with one important difference: HAER often produces documents, such as how machinery worked, bridge components for an object, or a plant functional to produce a good or service. The formal documentation consists of measured and interpretive drawings, historical reports, and large format photographs. All HAER documentation, as well as that from companion HAAR and Historic American Landscapes Survey (HALS) programs, shares four characteristics: explains and/or illustrates the site's significance; is accurate and verifiable; is stored on archival media for a 500-year lifespan that is also reproducible; and is clear and concise. Guidelines for meeting these standards, formally the Secretary of the Interior's Standards for Architectural and Engineering Documentation, are available online at the HAER website.

Drawings can include plans, elevations, sections, axonometrics, schematics, or interpretive illustrations that depict the evolution of the site. Depending on the site and the complexity of the site or structure and the time allotted for fieldwork, measurements can be taken by hand, total station, or three-dimensional laser scanning. The drawings are then produced using Computer Aided Drafting (CAD). The written report uses field work, primary and secondary sources to develop a physical description of the estate and the changes over time. In addition, it includes contextual information to convey the significance of the site or structure and an explanation of the process in use. Finally, large format, black-and-white photographs depict the current condition of the site or structure and an explanation of the process in use. Depending on the size and complexity of the site or structure, drawings may include plans, elevations, sections, axonometrics, schematics, or interpretive illustrations that explain and/or illustrate the site's significance; is accurate and verifiable; is stored on archival media for a 500-year lifespan that is also reproducible; and is clear and concise. Guidelines for meeting these standards, formally the Secretary of the Interior's Standards for Architectural and Engineering Documentation, are available online at the HAER website.

Not only does HAER documentation provide a comprehensive view of a property for future use, but it also serves as a baseline for interpretation and comparison projects. Documentation is also used as the basis for interpretive materials and to illustrate all types of restoration projects. Documentation is also used as the basis for interpretive materials and to illustrate all types of restoration projects. Documentation is also used to assess and research existing resources.

HAER provides documentation to the National Park Service for Architectural and Engineering Documentation, the Library of Congress, Prints and Photographs Division via the internet at http://loc.gov/pictures/collection/hh/.

For more information about the HAER program, or to access the HAER Guidelines for Drawings, History, or Photographs, visit our website at http://www.nps.gov/history/hdp/.

Covered Bridge Trusses, Charles Dudley, Kimberly Olson, Clara Whisenhunt, John I. Wilson, photographer, 2002. HAAR has funded a Lantern survey project with the National Lantern Ship Collectors Association to document all surviving three-masted lumber schooners prior to its dismantling in 2009.

Prairie Creek Fish Hatchery, Orick, California, Jet Lowe, photographer, 2005. A small-scale fish hatchery located in northern California, this site was one of the last built prior to a major policy program of mechanization and electrification that began in 1927.

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Lake Pontchartrain Causeway, Mandeville, Louisiana, Jet Lowe, photographer, 2004. Dubbed the “Eighth Wonder of the World,” the Mississippi Bridge is an aspynostyle vehicular causeway that connects two states via its midpoint on Lake Pontchartrain.

The HABS/HAER/HALS collection is administered by the National Park Service, grants of money to states, or a combination of federal and state funds. Every historic site that is of national, regional, or local significance has a place in the HABS/HAER/HALS collections at the Library of Congress.