

## THE YOUNG SCIENCE OF INDUSTRIAL ARCHEOLOGY

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*Built shortly after the Civil War, this Baltimore & Ohio Railroad bridge has been preserved as an historic engineering landmark near Savage, Maryland. An older neighbor is the former cotton duck mill behind it, which was built in 1816.*

Until recently, Americans have been little concerned with the preservation or recording of their industrial and technological heritage. This is paradoxical for the nation that is the most materially prosperous and industrialized in the world. Industrial archeologists have been attempting to fill this gap.

Industrial archeology, broadly defined, is a method of evaluating and interpreting the man-made physical environment. Recently it has been defined as "the field work aspect of the history of technology." In 1965, Kenneth Hudson, an Englishman to whom the credit must go for the current interest in industrial archeology, pointed out that "weaving together the results of field research on the one hand and library and archive research on the other . . . [is] the fundamental craft of the industrial archeologist." In this respect, industrial archeology is no different in its aims and methods

than those of folklore and folklife research, geography, architectural history, and many other fields. All are committed to the same basic goals—a deeper understanding of our culture through examination of its physical aspects. The traditional historian has looked with a certain amount of disdain upon investigators who have attempted to contribute to historical knowledge through the use of artifacts. In some ways, this attitude is beginning to change—especially evident and encouraging is the current emphasis on the interdisciplinary approach to the evaluation of a culture.

Today, just as in folklore, there is in industrial archeology a considerable degree of disagreement over the meaning of the term and what properly constitutes the subject area. Especially among American archeologists, the battle has been raging fiercely for several years. The major disagreement settles about the term "archeology." Whether the semantic battle is relevant is unimportant. There is no disagreement over the fact that our industrial heritage is fast disappearing and needs recording in some way, no matter what it is called. Similarly, in the area of folklore and folklife, the exact limits of the discipline are unimportant. The fact is that there is a need to record in some manner the traditional elements of our society, be they in the form of a quilt, song, tale or house type.

Industrial archeologists conceive their mandate very broadly. They embrace practically all aspects of heavy site-oriented technology including the fixed works of transportation and communication, public works, power production plants, and civil engineering works. Their interest extends from the factory into the worker's home. Industrial archeologists conceive of history as a continuum which does not end at any arbitrary point in time. Thus, they can be legitimately concerned with recording such things as the plastics industry which has developed only since the end of World War II. As a practical matter, however, industrial archeologists in this country have been, for the most part, concerned with recording the older structures and industrial processes that still survive. This is because they are the ones that are in the greatest danger and are the most frequent victims of "progress" and the superhighway. What is needed is enough concern for industrial archeology to insure recording and documentation of the most important and significant industrial survivals in this country.

The work of the industrial archeologist falls into three broad categories—inventorying, recording, and preserving. Among these aspects there is a great deal of interdependence and overlapping. Inventories are needed on national, regional, state and local levels to determine what industrial structures and features survive, have historical merit, and need recording, so that priorities can be established. Adequate inventories and rational priorities will prevent such possible disasters as recording twenty early iron foundries without recording any early woodworking establishments.

Recording is the most important phase of the work of the industrial archeologist and the one in

which he expends the most amount of time and energy. Through his recording efforts, the industrial archeologist offers his greatest contribution to history and to the future. The records that he extracts from an industrial site are usually in the form of measured drawings, both architectural and engineering, of the buildings and the equipment. His greatest efforts go into their drawings because they record most clearly the physical features of the site. The other types of recording devices that are employed by the industrial archeologist include: photography, both still and motion picture; sound recording; analysis of the manufacturing process; interviews of current and former employees of an industry; and the collection of artifacts. However, collection of artifacts is not a primary concern for an industrial archeologist because he deals primarily with structures which are site-oriented and cannot be moved, but must instead remain *in situ* (where they are). The overriding goal in the recording of a structure, site, or industry is to preserve the materials so that the history of the firm or industry can be written. When an industrial archeologist has surveyed the only known type of industry or structure still extant, his records can contribute substantially to a knowledgeable evaluation of the documentary evidence.

Preservation of the physical evidence of the industrial history of the nation is an important part of the industrial archeologist's work. He is concerned with preservation because of his concern for the structure as a document, for what it can tell him. There is a great deal of prejudice regarding the preservation of industrial sites, partly because they symbolize an unpopular aspect of our history. Nevertheless, industry is the cornerstone of our society and so deserves the same recognition and preservation as houses and churches. The primary concern of the industrial archeologist in preserving a building or site is to see that it retains as much as possible of its original fabric and feeling. No amount of writing, photography, or drawing will ever equal the building or site itself in terms of telling the future what, for example, the relationship of an 1825 cotton mill was to its landscape, of describing the atmosphere of its interior spaces, or of showing the way in which the naturally available light illuminated or failed to illuminate the working areas.

Our heritage is not limited to architecturally beautiful houses and churches, but includes factories, bridges, canals, and machinery. The techniques of the industrial archeologist are one way of examining the past in an effort to understand the variety of factors that have influenced the development of the United States.

Two subjects typical of those studied by industrial archeologists at the Smithsonian Institution and elsewhere are illustrated by the accompanying photographs. They show a scene at the wooden wheel manufacturing firm of Hoopes Bro. & Darlington at West Chester, Pennsylvania; the Bollman iron truss bridge and a nearby textile mill at Savage, Maryland.

In 1969, the Smithsonian, in conjunction with the Hagley Museum of Wilmington, Delaware, conducted an extensive study of the Hoopes factory. Founded in 1867, the firm once was one of the largest manufacturers of wooden wheels in the country. Today the majority of its output consists of decorative wheels for chandeliers. Nevertheless, the firm is a complete and representative microcosm of the industry, both in terms of the manufacturing process and of the specialized machinery used. The survival of the firm into the second half of the twentieth century offered a unique opportunity to investigate nineteenth-century production methods, machinery, and architecture in a working context.

The Bollman bridge has been described as one of America's most interesting industrial survivals. It was acquired in 1967 by Howard County, Maryland, from the Baltimore and Ohio Railroad for permanent preservation on the basis of its historical merit. The American Society of Civil Engineers has also designated the bridge a national historical civil engineering landmark. Built in 1869, the structure is the last known example of the first iron bridging system widely used by an American railroad. Near the bridge is a former cotton duck mill of 1816, probably the oldest standing textile mill in the state. The bridge was moved from a main line of the B & O to its present location in 1888 to carry a spur line over the Little Patuxent River. The survival of the bridge and mill can be partially explained by the fact that they are in a rural area well away from the "beaten path."



An opportunity to study nineteenth-century machinery and production methods in a vanishing industry was offered industrial archeologists in 1969 when they studied the wooden wheel manufacturing firm of Hoopes Bro. & Darlington at West Chester, Pennsylvania. Shown here is one stage in the manufacture of the wheels produced by the company, most of which are now used for decorative purposes.