

# Industrial Archaeology

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## Introduction

The Industrial Revolution is arguably one of the most important social phenomena responsible for shaping the modern world. Of course, some historians and economists have long contended that this was or was not a “revolution” in the strictest sense of the word and scholars still debate whether the use of this metaphor is problematic. Most writers agree that this was not an event, but rather a process, with predictable precursors and variable rates of change from place to place. While earlier shifts in productive organization and technological sophistication set the stage for the rise of manufacturing and all of its associated social dimensions, the changes in scale and intensity of productivity, settlement patterns, distribution, exchange, and control that characterize industrialized societies have had a profound and lasting impact on the way we live today. These forces have fundamentally shaped the scope and scale of the remains studied by historical archaeologists. To ignore or discount the central role of industrialization is to risk overlooking the obvious, if not to doom any attempt at understanding from the outset.

While most historical archaeologists would certainly agree with the general sentiments expressed above, the lack of focused attention on industrial matters within the practice of historical archaeology begs explanation. The literature of historical archaeology in English is not bulging with examples of the study of industry, industrial sites, industrial technologies, industrial societies, nor the process of

industrialization. The archaeology of industry has not been a core thematic focus of historical archaeologists over the four decades’ development of the field, but recently it is drawing increasing attention and interest. While other scholars have found industry a fertile field for study, mainstream archaeologists have come to it slowly. Any reader can examine the products of the Society for Historical Archaeology to evaluate this issue in a North American context, or the publications of the Society for Post-Medieval Archaeology (SPMA) for insight into the situation in the United Kingdom. If industrialization is so important, why have members of these two groups of archaeologists paid so little explicit attention to it, and why are they coming to it now? This chapter will examine the premises laid out above and attempt to explain the perceived lack of critical study, as well as some promising trends and prospects for the future. It will review important scholarship, institutions, and methods for the study of industrial archaeology (IA), embracing the global orientation of the volume by integrating case studies and examples from both North American and international contexts.

## British Origins of Industrial Archaeology (IA)

The roots of IA as a formal practice are to be found in Britain, and are ably chronicled by Angus Buchanan in *Perspectives on Industrial Archaeology* (Cossons, 2000) as well as others. I will merely summarize some of the salient points. IA was

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practiced first in the context of continuing education courses for adults. Michael Rix, a historian at the University of Birmingham, used the term in 1955 when he wrote on the Industrial Revolution in Great Britain, pointing out the usefulness of the physical remains for understanding and appreciating the scope and scale of industrialization. The Council for British Archaeology acknowledged a growing interest in the topic when they established an Industrial Archaeology Research Committee in 1958 (Buchanan, 2000:20). Fieldwork, in the form of site documentation and some excavation, was practiced largely on an avocational basis by continuing education students. The academic home of the enterprise was tied more to English history or the history of technology rather than to archaeology in those days, but the field enjoyed some enthusiastic growth in the 1960s. A core development area was in the Bristol region, where the new University of Bath provided a base for Buchanan in the history of technology program, and the Bristol Industrial Archaeological Society (BIAS). BIAS was an activist organization, promoting the preservation of important industrial monuments, as well as a scholarly base, publishing numerous books and sponsoring several formative conferences (called the Bath Conferences) that led to the creation of the Association for Industrial Archaeology (AIA) in 1973.

The combination of scholarship and activism practiced by BIAS is typical of the IA scene in the United Kingdom. The AIA is an association in the strict sense, as it is made up of a group of affiliated societies and individuals, including many members of regional and thematic organizations who are primarily concerned with their specific interests, but band together around the common theme of heritage conservation.

Many citizens of the United Kingdom are intensely proud of their nation's role in fostering (or founding) global industrialization, and express this pride in a variety of ways, including the numerous regional, canal, railway, and other enthusiast organizations that affiliate with the AIA. During the 1960s this pride served to galvanize attention to the physical remnants of industrialization in the context of preservation battles to save beloved monuments, such as the Euston train station, demolished in 1962 (Buchanan, 2000:18).

In addition to writers like Buchanan, another very prolific contributor to the early IA literature was Kenneth Hudson. Apparently something of a polymath, Hudson studied and wrote in multiple interest areas, but left a large body of writing about IA that was very accessible and influential. Two pieces deserve particular attention: Hudson's *Industrial Archaeology, An Introduction* (1963) was widely distributed and his later *World Industrial Archaeology* (1979) particularly served to broaden the scope of inquiry and awareness of industrial heritage. Barrie Trinder, a professor and productive writer on the scene at the beginnings of the Ironbridge Gorge Museum, has also played an essential role in scholarship, education, and preservation in the United Kingdom. Among his many publications is the massive *Blackwell Encyclopedia of Industrial Archaeology* (1992), and a more recent piece that reflects his attention to more recent industrialization is *Twentieth Century Industrial Archaeology*, coauthored with Michael Stratton (Stratton and Trinder, 2000). Another influential writer who began to produce good scholarship during this critical formative period and remains very active is David Crossley, with excavation reports like his *Bewl Valley Ironworks* (1975) and significant IA content in his more general book *Post-Medieval Archaeology in Britain* (1990). Sir Neil Cossons has been in many ways the most influential IA scholar in the United Kingdom, from his formative role in the Ironbridge Gorge Museum, a stint as director of the Science Museum of London, and chairman of English Heritage. Cossons has been a staunch ally of industrial heritage preservation and an articulate spokesman for the cause, both to a professional audience and to the public (Cossons, 1975, 2000).

## Early IA in the United States

Even before historical archaeology gained recognition or self-identification as a subdiscipline, archaeologists were examining industrial components of North American sites. As early as the 1930s, archaeologists with the U.S. National Park Service (NPS) encountered evidence of early American industry in their excavations at Jamestown (Cotter and Hudson, 1957). Those early excavations revealed

remains of activities, such as pottery and glass manufacture, brick and lime kilns, and even iron making. One could argue that these productive endeavors were practiced at a craft level in Jamestown, but they paralleled similar activities in England and certainly qualify as precursors to industry. The interesting point is that they were studied archaeologically.

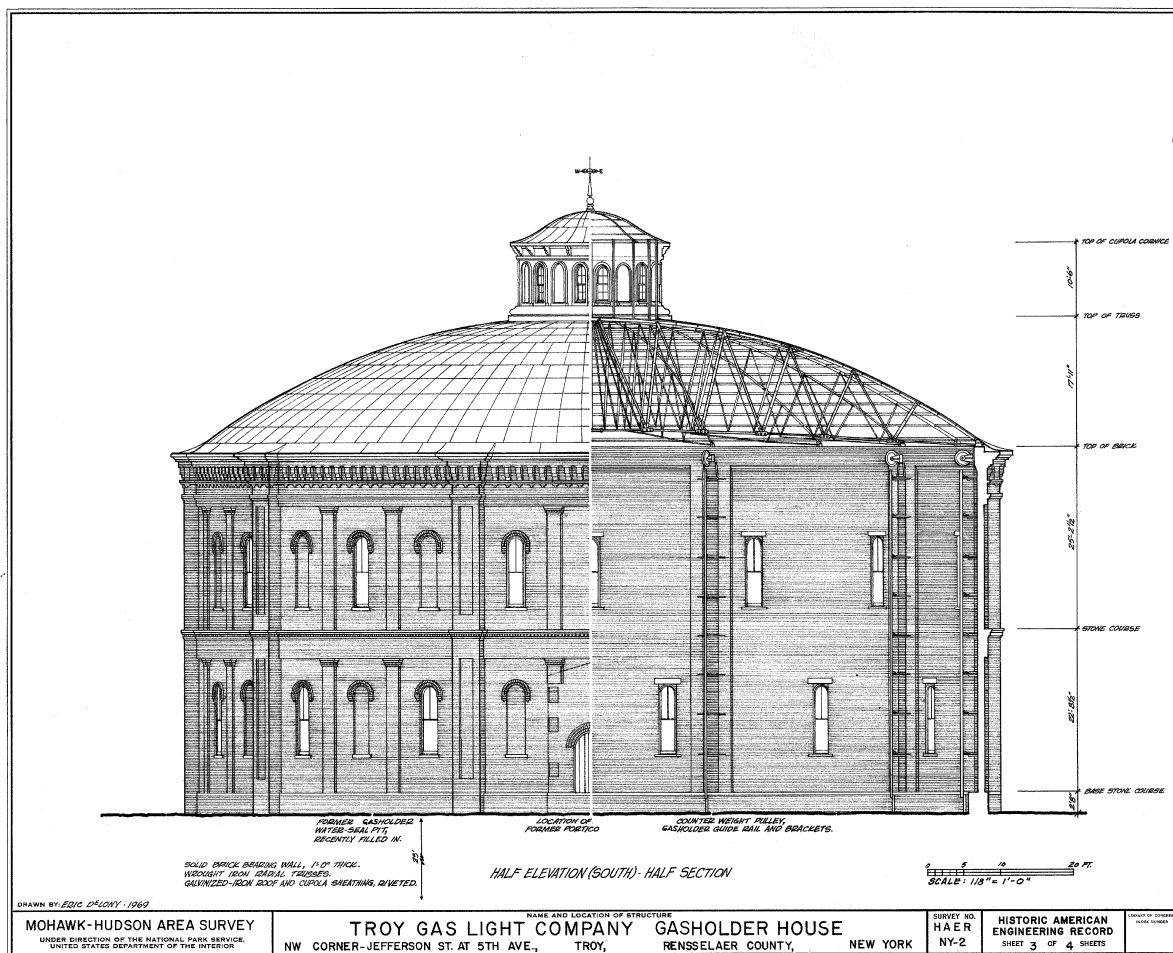
Contact with British activities through individuals such as Smithsonian Curator Robert M. Vogel brought increased awareness of industrial heritage to the United States in the 1960s, a time when the historic preservation movement was enjoying a significant upswing. While industrial sites did not generally draw significant attention in the preservation battles of the day, they did rise in the sights of scholars and local activists who recognized their significance in historical terms and their vulnerability in the face of urban renewal throughout the country (Sande, 1976). Vogel not only visited British colleagues on their turf, but also brought speakers such as Kenneth Hudson to the United States in the 1960s, stimulating interest in the minds of a community of curators, architects, and archaeologists. Together with allies from the engineering community, especially the American Society of Civil Engineers, a new program, the Historic American Engineering Record (HAER), was created within the NPS in 1969 (DeLony, 1999). This led directly to an initial formal project for the new entity, a survey of the Mohawk–Hudson River junction area in New York, co-sponsored by the Smithsonian Institution and overseen by Robert M. Vogel (1973). Two earlier surveys, in 1967 and 1968, of New England Textile Mills can be interpreted as dry runs for the new agency.

The significance of HAER in the formative years of American IA cannot be overstated. HAER served as a lodestone for practical expertise, setting standards for documentation that remain in effect today and are both the envy and the model for standards in other countries (Fig. 1). HAER, in conjunction with the Smithsonian, was the source of key personnel and support for the growing group of professionals and enthusiasts that make up the IA community. These early activities and players combined in 1971 to create a new organization, the Society for Industrial Archaeology (SIA), to promote interdisciplinary exchanges, generate publications and bibliographic resources, to

educate the public and the government about the values of preservation, and study of industrial sites (Hyde, 1991).

The genesis of SIA followed fairly closely after the creation of the Society for Historical Archaeology (SHA) in 1967, and there was serious consideration given to being an affiliate of SHA. However, the perceived differences between constituencies resulted in a separate society being formed. Even though there is and always has been considerable overlap in membership and goals, the two groups have significant differences as well, superficially symbolized in the divergent spelling of archaeology (SIA eschews the second “a”). A flurry of published discussion between Robert Vogel and Vincent Foley also marked the beginnings of IA and characterized some of the differences (Foley, 1968, 1969; Vogel, 1969). Foley argued that IA was not archaeology because it focused on preservation, many practitioners were not professionals, and most of all, they did not dig for their data, the “proper” form of archaeology. Vogel’s rejoinder was incredulity that a preservation ethic could be construed as bad, that amateur archaeologists may be professionals in their own right and are capable of making excellent contributions to research, and finally that the limitation of physical data sources to buried artifacts was ludicrous on the face of it. This dialogue probably changed no one’s mind, but typified some of the tensions between historical archaeology and IA in those days.

Some notable examples of American archaeologists tackling industrial sites in a disciplined way appeared in the 1980s and 1990s. George Teague’s (1987) work with the NPS treated a number of industrial sites in the western United States and argued for an anthropological perspective on workers and the workplace. He faced the tensions referred to above very directly in his Ph.D. dissertation, saying “Whether an integrated archeology of industry comes to pass, it is well to remember that there are only two kinds of archeology: not industrial and historical, but good and bad” (Teague, 1987:227). Bruce Council, Nicholas Honerkamp, and Elizabeth Will published an excellent archaeological site report on an ironworks in Tennessee, placing the industry within a regional and national context (Council et al., 1992). On a more comprehensive scale, Robert



**Fig. 1** Gasholder, Troy, New York, documented by HAER in Mohawk–Hudson Area Survey (HAER Collections, Library of Congress). This image serves also as the logo for the Society for Industrial Archeology

Gordon and Patrick Malone (1994) published their *Texture of Industry, An Archaeological View of the Industrialization of North America*. This encyclopedic summary addresses not only hundreds of sites and landscapes, but also investigates major themes of historical and technological change, employing an archaeological perspective informed by scientific and experimental studies, as well as thorough historical research and reasoning.

Neither SIA nor HAER has ever included a dominant constituency of archaeologists. The use of the term “archeology” in the name of the society followed on British precedents and related to the emphasis on physical evidence rather than the documentary sources. While archaeologists have

always been present, and often influential, in SIA, archaeology has been very scarce in HAER projects. The NPS has archaeologists in other divisions and there seems to be little interaction with HAER. Architects, historians, and engineers have dominated HAER, which is closely affiliated with the Historic American Buildings Survey (HABS), from the start. The organizers decided from the beginning to pursue a path separate from the social sciences orientation of most mainstream archaeologists, a path that emphasized high-quality documentation and description. Not only have they conducted detailed documentation projects on hundreds of sites over the years, but they have also overseen a number of statewide surveys of industrial

sites, surveys that serve as baseline assessments for managers and scholars alike (DeLony, 1999).

SIA has grown slowly but surely, with an eclectic mix of professional and avocational members numbering nearly 2,000. Regular publications include a quarterly newsletter and biannual journal (*IA, Journal of the Society for Industrial Archeology*). SIA holds annual conferences, a separate set of fall tours, and occasional study tours, in addition to its publication activities. In recent years, several small grants have been awarded to preservation groups taking an activist role in the support of industrial heritage preservation. A significant proportion of the SIA membership (like that of the AIA) is drawn from avocational industrial enthusiasts, people who make their livings in other ways, but are fascinated and passionate about some aspect(s) of industrialization for their own sake.

## IA on the International Scene

It was no coincidence that the Bath Conferences in the United Kingdom helped to spawn the primary international IA group, The International Committee for the Conservation of the Industrial Heritage (TICCIH), after a series of meetings beginning in 1973. TICCIH has grown in influence and impact over the succeeding decades, serving as a venue for scholarship and political action. With over 40 nations represented, TICCIH holds regular congresses every 3 years and occasional intermediate meetings, most with published proceedings (Nisser, 1978; Palmer and Neaverson, 2000; Trottier, 1998; Wright and Vogel, 1984). It publishes a newsletter (TICCIH Bulletin) and sponsors a journal (*Patrimoine de l'industrie: Industrial patrimony, resources, practices, cultures*). Since sealing an agreement in 2000, TICCIH has also served as a Scientific Committee for the International Council on Monuments and Sites (ICOMOS), providing expert advice on World Heritage nominations of industrial sites.

There are several other serial publications in Europe that treat industrial heritage concerns. It is interesting to note that while the scholarship is sound, most of these publications are more like magazines than like journals. For example, *Industriearchäologie* is published quarterly in Switzerland, in the German language, and offers a slick and colorful look at a global array of industrial heritage topics. Another

example in German, *industrie-kultur*, is published quarterly by the Rheinland Industrial Museum in Essen. It is also slick and colorful, generally taking a thematic or topical approach, with recent issues on gold, Russia, and paper, for example. It includes book reviews, news from other countries, and a calendar of events and exhibitions. Published by the Comité d'information et de liaison pour l'archéologie, l'étude et la mise en valeur du patrimoine industriel (CILAC) under the auspices of the French Ministry for Culture, *L'archéologie industrielle en France* is another glossy and attractive volume with conference reports, reviews, a calendar, and scholarly articles on a range of international industrial heritage topics. An Italian magazine celebrating industrial heritage, *Scuola Officina*, has been published for several years by the Museum of Industrial Patrimony in Bologna.

Industrial heritage conservation has been a serious undertaking in Europe for some years, with a number of successful examples. Here, I will only consider three. The Ecomuseum approach, combining cultural and natural resources in context, has been very popular in Sweden, and has articulated with industrial heritage preservation efforts to excellent effect. In particular, in the Norberg area of central Sweden, where metal mining and processing has been practiced for centuries, serious attention has been paid to integrating environmental conservation efforts with preservation and interpretation of industrial sites and landscapes. This region is particularly rich in industrial heritage of both tangible and intangible sorts. There are extensive archaeological remains of preindustrial iron production, including the excavated site of Lapphyttan, the earliest securely dated blast furnace in the world, dating from the thirteenth century (Nisser, 1983), and its nearby-reconstructed twin, New Lapphyttan. The Norberg area also boasts a great number of well-preserved iron- and steel-producing sites and landscapes dating from the seventeenth to the twentieth century, including Engesbergs Bruk, a World Heritage Site (Fig. 2).

In Germany, a number of premiere examples of industrial heritage preservation exist, including several museums devoted to industry. A recent initiative with great promise and impact lies outside the museum and the academy—the Route of Industrial Heritage of the Ruhr. Over the past few years, an ambitious initiative for cultural and economic regeneration in this depressed iron and steel region has linked dozens of

**Fig. 2** The eighteenth-century Engesbergs Bruk blast furnace iron-making complex, Norberg, Sweden, which is listed as a World Heritage Site (photograph by the author)



sites and organizations in southwestern Germany as part of an innovative effort to promote and preserve the physical landscape of industrial society through heritage tourism. The success of this effort has led to the development of a European Route of Industrial Heritage, a European Union initiative that will link hundreds of sites and landscapes across the continent for heritage tourism. A critical element for consideration here is that the sites included must meet strict criteria for quality of interpretation and background research, an approach that intimately combines elements of scholarship and conservation (see <http://www.route-industriekultur.de> and <http://en.erih.net/>).

In Spain's autonomous province of Catalonia, the National Museum of Science and Technology coordinates a network of more than 20 sites and museums that reflect the rich industrial heritage of the province. Museums dedicated to cement, paper, leather, textiles, mining, railroads, and other industrial pursuits preserve sites where these activities were undertaken and interpret industrial heritage for the public in high-quality presentations (see <http://www.mnactec.cat/>).

## An Academic Base for IA

In recent years, in the United Kingdom, the United States, and beyond, there has been increasing interest in broadening the reach of IA and

developing an academic home for training future generations of practitioners. Academic degree programs have been developed in conjunction with the Ironbridge Gorge program, at Leicester University, at Michigan Technological University (MTU) (Seely and Martin, 2006), and recently at the University of Padua, among others. A new degree program in Industrial Archaeology has been developed under the direction of Dr. Helmuth Albrecht at Technische Universität Bergakademie Freiberg, within the Department of the History of Science and Technology. The Royal Institute of Technology in Stockholm has an innovative Ph.D. program in Industrial Heritage Studies within the Department of the History of Science and Technology (Nisser, 1983). The Department of Archaeology at Boston University has long offered IA courses and supported extensive fieldwork at the nineteenth-century Boott Cotton Mill in Lowell, Massachusetts (Beaudry and Mrozowski, 1987). The slightly uneasy interdisciplinary position of IA in the interstices between history, anthropology, and engineering has made the discovery of a happy academic home somewhat difficult, because it does not easily fit in anywhere, and because novel enterprises in the academy are most welcome when they involve a practical combination of money and job prospects.

## The Heritage/Archaeology Divide: A Crisis of Identity?

It is fair to say that early IA efforts in both the United Kingdom and the United States were aimed primarily at heritage preservation and documentation. While there were always elements of broader scholarship at work, the dominant focus was on recognition of the physical remnants of industrial heritage and on high-quality documentation and preservation. This heritage orientation is laudable, and has had an important impact on cultural values. At the local, national, and international levels, attention is being paid to industrial sites in ways never before imagined, largely due to the influence of IA scholarship. For instance, every county in England has a museum dedicated to industrial history, generally based on an important site and actively engaged in interpretation for the public. Many key industrial sites and landscapes are the focus of significant preservation and interpretation efforts. The Ironbridge Gorge comes immediately to mind as the premier example. Home of the first iron bridge, and touted by some as the home of the Industrial Revolution because of its central role in the shift to coke as fuel in iron making, this site exemplifies much of the British pride in industrial heritage (Alfrey and Clark, 1993; Alfrey and Putnam, 1992).

A number of sites within industrial contexts have been studied archaeologically without explicit

reference to or identification as IA. Much of the recent work of archaeologists including Paul Shackel, Robert Paynter, and Stephen Mrozowski falls into this category. Shackel's extensive work at Harper's Ferry, for instance, deals with the social consequences of industrialization, but would not likely be identified as IA (Shackel, 1996, 2004; Palus and Shackel, 2006). Paynter's (1989) excellent work on inequality and Mrozowski's extensive material on class (for example, Mrozowski, 2006) also deal with matters of central importance to understanding industrialization from an archaeological perspective, but would not be identified as IA by most readers. None of these authors generally publishes in the primary IA journals, nor present their work at the IA conferences. Their archaeological practice is focused elsewhere. Yet the work that they do has considerable interest and import to any examination of industrialization as a social process.

The U.S. National Park system has incorporated a number of fascinating industrial sites in its heritage preservation role: Hopewell, Saugus, Lowell, Tredegar, Kennecott (Fig. 3), Springfield Armory, Harper's Ferry, and Keweenaw among them. The HAER program continues to generate high-quality documentation of sites and structures, which is available in a highly accessible online collection maintained by the Library of Congress (see [http://memory.loc.gov/ammem/collections/habs\\_haer/hhmap.html](http://memory.loc.gov/ammem/collections/habs_haer/hhmap.html)).



**Fig. 3** Kennecott Copper Mill, Wrangells St. Elias National Park, Alaska (photograph by the author)



The World Heritage List, maintained by ICOSMOS (with advice from TICCIIH on industrial sites), includes 830 properties, 644 cultural, 162 natural, and 24 a mix of cultural and natural. Twenty-two of those sites can be characterized as representing Industrial Heritage, most of them inscribed in the past few years. The United Kingdom has distinguished itself recently by seeing six IA sites through to inclusion: Cornwall and West Devon Mining Landscape, Saltaire, New Lanark, and Dewent Mills (the last three are all textile-production sites), Blaenavon (an iron-producing region in Wales), and Ironbridge Gorge. There is a Cuban coffee plantation; a high-mountain copper-mining community in Chile; coal, iron, and steel sites in Germany; mines and iron plantations in Sweden; and salt works, canals, bridges, mills, and associated landscapes from Belgium to Poland. This kind of recognition is a direct result of high-quality scholarship and educational efforts to bring awareness of industrial heritage to the public eye.

On the "IA as archaeology" side of the ledger, more emphasis has been placed on generating scholarship that helps to illuminate the process of industrialization and its impact on society. Research has often concentrated more on workers' housing, communities, and landscapes, rather than on technology or the workplace. A debate within the United Kingdom centered on whether IA was a period or a thematic study—defined by the period of industrialization or by the process of industrialization (Clark, 1987; Palmer, 1990). The consensus among British academics was that it was a period study, consistent with the subdivisions within academic archaeological study, such as Classical, Medieval, etc. This is consistent with developments at Palmer's home institution, Leicester University, where IA ultimately found a solid home within the School of Archaeological Studies, later headed by Palmer. Palmer and her long-time writing partner, Peter Neaverson, also contributed an influential textbook called *Industrial Archaeology, Principles and Practice* (Palmer and Neaverson, 1998).

Sessions and papers focused on IA have become commonplace at the meetings of the SHA (Quebec City in 2000 [Cassell, 2000] and Providence in 2003, for example) and the SPMA. Special symposia exploring the reach and future of IA have been

held by SIA ("Whither IA?") in Lowell in 1998, a joint conference by AIA and SPMA ("The Archaeology of Industrialization") in Bristol in 1999, an AIA conference ("Understanding the Workplace") in Nottingham in 2004, and even the Theoretical Archaeology Group (TAG) held an IA-themed conference ("An Industrial Revolution? Future Directions for Industrial Archaeology") in Manchester in 2002. "Whither IA?" was meant to assess both the origins and future of the field, in North America and abroad, and while the conference did not result in a unified publication of proceedings, a number of the papers have appeared on their own and gave a good flavor of the topics under consideration (Cleere, 2000; Gordon, 2000; Gross, 2001; Hardesty, 2000; Hyde, 2001; Leary and Scholes, 2000; Malone, 2000; Palmer, 2000; Quivik, 2000; Roth, 2000; Trinder, 2000). Topics such as industry in the twentieth-century city, industrial landscapes, archaeometric analysis of artifacts, World Heritage designations, heritage management, and experimental archaeology covered a broad range, well beyond traditional concerns with descriptive documentation. See Hyde's (2001) summary statement for his assessment of the symposium.

The AIA/SPMA conference resulted in a published book of proceedings (Barker and Cranstone, 2004). A wide-ranging set of papers sought to clarify the core values and approaches of the two somewhat divergent archaeological subdisciplines and worked to breakdown the relatively artificial barriers that had separated practitioners. David Cranstone's (2004) thoughtful concluding essay sets this divergence in an intellectual and historical context, including the notion that the historical/post-medieval approach tends to emphasize consumption, while the industrial approach focuses on production.

The AIA conference "Understanding the Workplace" was published as a volume of the AIA Review, bringing together 20 papers on a variety of topics and co-edited by David Gwyn and Marilyn Palmer (Gwyn and Palmer, 2005). A decidedly unsystematic and uncritical selection of the papers provides a sense of the volume (Alderton, 2005; Bayley and Williams, 2005; Falconer, 2005; Hughes, 2005; Mellor, 2005; Nevell, 2005; Oglethorpe, 2005; Palmer, 2005; Symonds, 2005). From discussions of transportation, textiles, and housing, to archaeological science applications, heritage agendas, and urban space as



social construct, these papers also reflect a broad range of considerations under the rubric of IA.

The TAG conference also resulted in a book of proceedings (Casella and Symonds, 2005). Most of the papers touch on “weighty issues” such as globalization, post/modernity, class, gender, and power. The heritage orientation of earlier IA conferences in the United Kingdom is largely absent, save for the paper by Clark (2005). Interestingly, the concluding essay by Beaudry (2005) finds the obsession with definition of the appropriate field of study somewhat meaningless, arguing instead for a more holistic approach that minimizes the pigeonholing instinct that accompanies specialization. She maintains that there are multiple worthwhile paths to understanding the effects of industrialization and the rise of consumer culture, rejecting the notion that historical or IA should be a “unitary field, or the notion that all of us should subscribe to an overarching program of research and cleave to a single paradigm or theoretical perspective” (Beaudry, 2005:301–314). Her discussion of various approaches employed by the authors in this and other volumes provides a stimulating set of alternatives. Finally, Beaudry (2005) offers her reflections on the business of heritage, the realm of preservation, and avenues that might help us to engage and support broader audiences, making greater impacts on the societies we live in.

## **A Case Study of IA in the Twenty-First Century: The West Point Foundry**

The West Point Foundry was established in the Hudson River Valley, about 50 miles north of Manhattan, in 1817 by a consortium of prominent businessmen and military figures. Located across from the new U.S. Military Academy, the foundry specialized in ordnance production, building cannon and shot for the U.S. Army and the U.S. Navy for almost 100 years. They also produced an array of iron products ranging from stoves and agricultural implements to the first locomotives in America, steam engines for industrial and maritime applications, massive pumps for installations, such as the Brooklyn Navy Yard’s dry dock, pipes and valves for the Croton Aqueduct to provide water for New York

City, and heavy equipment for the global sugar industry. This business has an illustrious history, serving as an early example of “vertically integrated” production, where all aspects of complex manufacturing, from raw materials to distribution, were controlled by a single enterprise. They might also be characterized as an example of the “military–industrial complex,” where industrialists were allied closely with decision-makers in the government and military. In this case, the connections were through both business and family ties. At any rate, the West Point Foundry was a significant producer and innovator, its long-time Superintendent Robert Parrott having developed and produced the Parrott-rifled cannon there.

The 100-acre site of the West Point Foundry, largely abandoned over much of the last century, was acquired by an environmental organization, The Scenic Hudson Land Trust, Inc., in 1996 as part of their mission to improve river access and green space preservation in the Hudson Valley. After becoming aware of the historical character of the property, Scenic Hudson engaged MTU’s IA Program in a partnership to take advantage of and develop the historical dimensions of the site. MTU operates its Field School in Industrial Archaeology on-site each summer, providing expert advice about its physical and historical resources to Scenic Hudson, providing outreach opportunities for schools and the local community, and using the site as a world-class training ground for educating archaeologists. Scenic Hudson supports the research, outreach, and educational enterprise with generous funding. Graduate students help design research agendas, direct fieldwork, analyze results, and write up technical reports as part of their master’s and doctoral degrees. In this way, both the general public and the academic community benefits, since the research results help to guide interpretation and management of the site in the public interest. Public open house weekends, volunteer opportunities, and integration into school curricula also serve to broaden the impact of the research work (see <http://www.westpointfoundry.org/>).

While the industrial nature of the site was and is the central element that drives the research, this project explores more than the just the technical side of the enterprise. Initial attention was focused

on research design, the development of a database of historical resources (Norris, 2002), and the characterization of the site's physical development over-time via historical and modern map resources (Valentino, 2003). Remote sensing, excavation, and historical research have been used to investigate the waterpower system (Finch, 2004), the boring mill (Herzberg, 2005), the blowing engine for the blast furnace (Timms, 2005), the blast furnace itself (Kottlensky, 2007), and the casting house (Fig. 4). The previous projects were written-up as Masters' theses, while several other productive components of the site have been addressed in technical reports (on file with MTU). Beyond these technical dimensions of the site, the general development of the community and the relationship of the workers to the managers at the site are also under investigation. The latter has been pursued by way of excavations in the Vinegar Hill workers' neighborhood and two seasons of excavation at the so-called East Bank House (Fig. 5) (home of the first engineer, later converted to a boarding house [Deegan, 2006]). Elizabeth Norris of the University of Massachusetts is currently working on a Ph.D. dissertation that will address the former by focusing on an archaeological analysis of the larger community. Both the technical and the social dimensions of the site and community are under study in Norris's project, demonstrating

the potential for integrating the seemingly disparate elements of historical and IA under one umbrella.

## Conclusion

The oft-perceived conflict between the emphasis on documentation and preservation supported by governments, museums, and nonprofessional enthusiasts on the one hand, and social science driven by academic archaeologists on the other hand, has driven a wedge into the practice of IA, a wedge that is unfortunate and unnecessary. There is enough room for both lines of emphasis and great opportunities for mutual benefit. The documentation and preservation advocates have had great success in saving sites, educating the public, and raising awareness of the value of industrial heritage sites on both the national and the global scenes. The academics have made great strides in explaining the dynamics of industrialization as a process, and have striven to raise up a generation of scholars to carry on the work of research and interpretation. Any rational student of the recent past recognizes that there is a need to understand both the technical aspects of industry, from the molecular level of detail seen in archaeometry to the industrial networks of production and distribution, and the

**Fig. 4** Excavated ironworking cupola base, West Point Foundry, Cold Spring, New York (photograph by Michigan Technological University staff)



**Fig. 5** East Bank House, West Point Foundry, Cold Spring, New York (photograph by Michigan Technological University staff)



larger scope of social dynamics within communities, political and economic actions, and even globalization. Some researchers must focus on the technical aspects of iron making, while others study resistance to industrial discipline; some must concern themselves with the minutiae of waterpower, while others deal with the power of capital. All may fruitfully work within the scope of archaeology, whether styled as historical, post-medieval, or industrial.

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