

Departments

PRESERVATION RESOURCES

POINT OF VIEW

NCPTT

STATE NEWS

POINT OF VIEW

Letters

Dear Editor:

As Superintendent of Gettysburg National Military Park, I'd like to take a moment for clarification in my response to Eric Foner's visit to the park "Changing Interpretation at Gettysburg NMP," in the Slavery and Resistance issue of CRM (Vol 21, No.4). With sincere apologies to the interpretive staff here at Gettysburg, my remarks did not adequately describe the full range of programs offered by our interpreters, whose depth of knowledge, passion for the park, and dedication to the highest possible quality of interpretive services for our visitors are unsurpassed.

What also was not clear from Dr. Foner's letter is that he did not have the opportunity to attend any of the interpretive tours and programs offered by the park due to time constraints. His critique is solely devoted to interpretive media such as the static exhibits in the visitor center and the Cyclorama Center, battlefield waysides, and printed media. These exhibits form the baseline of our interpretive program, but Gettysburg offers much more for those who have the time. Our field interpretive programs do provide the context needed to tell the story of the Gettysburg Campaign within the context of American history. These programs address the larger issues and themes of the Civil War, including slavery, the black experience during the war, and impacts on civilians. This summer we offered programs such as The Civilian's War,

Slavery to Soldiery, Casualties of War (a daily medical program), Men of Color: To Arms (the story of black soldiers' experience in the American Civil War), and the Civil War soldier (which examines why soldiers, Northern and Southern, fought and what motivated them).

We can't overlook the value of these excellent programs. The bad news is that because of tight staffing, many of our visitors do not experience them. For the many who, like Dr. Foner, spend a short time in the park and rely on interpretive media alone, we do not begin to tell the whole story. We hope to resolve that problem through the contextual interpretive displays in the new museum.

*Dr. John A. Latschar
Superintendent
Gettysburg NMP*

Dear Editor:

When I received the CRM issue, "The Information Ecosystem" (Vol. 21, No. 6), I was disappointed to note that architects, like myself, are not "players" in cultural resource management. Apparently, the same goes for landscape architects and planners.

It is difficult enough to get square-headed archeologists to accept the fact that the world doesn't revolve around them, but now NPS puts them at the top of the food chain (I initially thought the list starting on page 3 was alphabetical, but then I noticed that "historians" were slipped in between "curators" and "conservators"). Granted, there is a large number of archeologists doing field surveys of archeological resources and a large number of the environmental firms for which they do

CRM under contract, but leaving out major "players" such as (preservation) planners, landscape architects, and architects is selling the professions and CRM short.

*John Cullinane, AIA
John Cullinane Associates
Annapolis, MD*

Dear Mr. Cullinane:

You are right, it would have been lovely to have had articles by architects, preservation planners, and landscape architects as well as the professions we featured in the issue. My list of professions was far from totally complete—there are perhaps 20 others which might have been mentioned in an exhaustive list. You are also right about the historians being out of alphabetical order, not surprising since they so often refuse to stay in the places society allocates them. They are frequently a surprising profession.

Frankly, we ran out of space before we ran out of excellent articles. Each of the featured writers wrote so eloquently—not to mention profusely—that we could not bring ourselves to slash their excellent work in order to look for additional articles from other professions on speculation. This is a topic that raised a lot of passion in our world. It is good to see that the topic arouses passion in those who read it also.

CRM always welcomes additional articles on such topics. Since you clearly know of people in these fields who would want to write on how preservation planners, architects, and landscape architects are dealing with the evolving world of data, information, knowledge, and the electronic information ecosystem evolving before our eyes,

resource conservation and regulation. Thus, one now can approach the FERC 106 process with a presumption that many portions of the region's pre-1945 hydroelectric power complexes potentially will have NRHP significance. Nevertheless, the chicken and egg situation still largely remains, for no comprehensive context study of California hydroelectricity exists against which to measure individual sites and resources for historical significance and preservation worthiness.

A second problem in the FERC 106 process that contributed to inadequate assessment of historical hydropower resources is one that seems to be endemic to the general practice of CRM. After over 30 years of historic preservation under the NHPA and over 20 years since the public history movement emerged, there is still no guarantee that professional historians, competent in the subject matter, are doing the research and evaluation required under the 106 process. CRM is widely characterized by historianless history.⁴

When the NHPA 106 process was initiated, archeologists and anthropologists, prepared through salvage archeology experience to complete site-specific surveys, quickly assumed title as "the" cultural resources specialists, while historians remained comfortably in the academy. From the start, non-historians dominated the field, as cultural resource contractors and as the client and regulatory agency personnel who let contracts and reviewed results. Not surprisingly, when power companies needed cultural resource specialists, they hired archeologists, who, in turn, contracted for surveys and resource assessments with archeologist-headed cultural resource firms.

In their work, the CRM specialists followed their disciplinary interests. Little history was done, and no specific requirements were placed on consultants to employ competent professional historians. When project managers asked for history, contractors gave the title

"project historian" to non-historians who then did what they could.⁵ And, when management of NRHP-eligible historical projects called for professional monitoring, archeologists were assigned the job.⁶ To be sure, important historical resources were identified and some presentable project overviews written, but few, if any, of non-historians doing this work possessed sufficient competency in the historical issues being investigated to meet the professional standards implied in the 106 process.

Unfortunately, despite the passage of time, historianless history persists in CRM. It remains a major failing of the 106 process, and neither industry nor regulatory agencies have been willing to confront the problem. Indeed, despite relentless lobbying by the history profession, even the Secretary of the Interior's proposed changes for professional qualification standards for historians continue to be less rigorous than standards for other CRM professionals.⁷ Like existing standards for professional historian status, proposed ones accept undergraduate

degrees in closely related fields plus experience rather than mandating either a graduate or undergraduate degree in history, whereas both existing and proposed standards for archeology demand a graduate degree. In effect, the Secretary of the Interior's standards for history give professional standing to the very non-historian project historians who have been doing scrappy history for so many years.

Finally, even when significant historical features are assessed by competent historians, mitigating adverse effects to them over time run up against the financial interests of the power companies themselves, and the 106 process seems unable to protect resources. To protect its business

interests, for example, Southern California Edison has embraced "continuity of use." Conceived by CRM consultants as an honest way to deal with working features in hydro resources, "continuity of use" expands the idea of "replacement in kind" for still-operating historical hydro facilities.⁸ It legitimizes, for example, the replacement of an old wooden flowline with steel pipe because both conduit types perform the same task and the plant is in continuous operation. "Function" thus becomes as much a part of historical integrity as location, setting, design, workmanship, materials, association, and feeling. Consequently, managing an operating hydropower project by "continuity of use" means making the primary preservation objective the efficient, cost-effective maintenance of project elements in



relationship to the system as a whole.⁹ As a result, removal of resources that become a financial or operational liability is justified as standard practice.

"Continuity of use" allows SCE to demolish almost any historical resource on a hydro project. With the concept denoted in management plans and HABS/HAER recordation specified as the generic mitigation measure, SCE has set upon a path of recordation and demolition of historic structures. This is evident particularly at the Bishop Creek Hydroelectric System Historic District and the Rush Creek Historic District where, since 1990, hydro plants have been "automated for efficient operation." At both plants, unused housing

Rush Creek Power House.

please do so. I will look forward to reading your articles.

Diane Vogt-O'Connor
Guest Editor

Dear Editor:

CRM Vol. 21, No.2, lists historical research projects in the National Park Service. Inasmuch as other ethnographic projects are listed, I would like to point out a major omission.

Petrified Forest, El Morro, and El Malpais have a joint two-year Ethnographic Overview project under way with seven related (associated) tribes. The University of Arizona has completed two of five tasks. Approximately one third of the Intermountain Region's Ethnographic funds went to this project in 1997. Clustering projects such as this should receive some press to encourage others to look into this cost-effective approach.

Ken Mabery
Management Assistant
Resource Stewardship
El Malpais National
Monument, NM

Correction

The credit line for the photograph, "Mutiny Aboard the *Amistad*," by Hale Woodruff (CRM, Vol.21, No. 3, p. 45) should have read, "Talladega College Archives, Talladega College, Talladega, Alabama. The editors apologize for the error.

Dear Editor:

I looked forward to receiving the issue of CRM devoted to Shenandoah National Park because I was aware that my photographs of the vista clearing at The Point Overlook (Milepost 55.6) in Shenandoah had been selected for publication.

I am very gratified to see my work in print on page 21 of Vol. 21, No. 1, and I appreciate your courtesy in crediting the photographs on that page to me. I cannot, however, take credit for all the photographs on that page, since I

did not make the two photographs of Milepost 6.0 which appear at the top of the page. My work was confined to the Central District of the Park between Mileposts 31.6 and 65.5. Perhaps the photos of Milepost 6.0 were made by Mary Lowe, who provided the other photographs from that area of the Park.

In fairness to the person who did make the photographs of Milepost 6.0, you may wish to consider running a correction in the CRM.

John F. Mitchell

Editor's Note: The photos of Milepost 6.0 were made by Mary Lowe.

Hydroelectricity and the FERC 106 Process—A View from the West

James C. Williams

Since 1966, electric power companies renewing hydroelectric project licenses with the Federal Energy Regulatory Commission (FERC) have had to identify and mitigate adverse impacts on significant cultural resources in compliance with Section 106 of the National Historic Preservation Act (NHPA). Because most of hydroelectric projects originally were licensed for 50 years, the hydro facilities themselves also are often eligible for listing on the National Register of Historic Places. However, because hydropower facilities are in continuous use, NRHP eligibility poses latent operational dilemmas. The FERC 106 process is, therefore, important for electric power companies, and California's experience with it reveals much about how the process works.

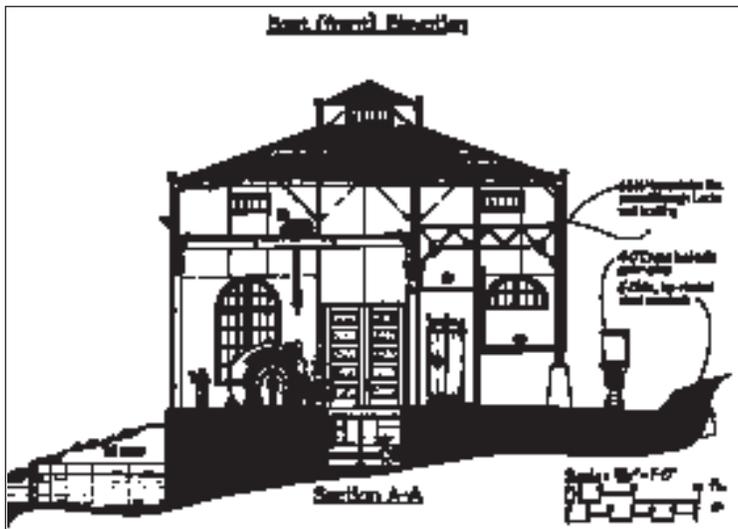
Historically, California is one of the America's most important hydroelectricity regions. The region developed hydropower early and distinctively, leading the national industry in high-head turbine development and long-distance power transmission. Hydropower helped put California into America's post-industrial vanguard, yielding an average of 80% of the state's electric power between 1900 and 1950 and providing a foundation for the microwave electronics

industry.¹ Today the state's two major electric utilities, Pacific Gas and Electric Corporation (PG&E) and Southern California Edison Company (SCE), own and operate over 70 pre-1945 hydroelectric powerhouses—10% of the national total. Thus, California's historic hydropower facilities are an important part of the state's energy system as well as being historical resources themselves; however, addressing this dual importance in the relicensing of these resources under FERC has uncovered serious flaws in the FERC 106 process.

The first FERC 106 process shortcoming involves understanding the historical context on which evaluation and findings of significance for individual site resources depend. In California, one must understand hydroelectricity's role in the state's broader history as well as specifically know the distinctive characteristics of hydropower development within the region. But, since there are no historical context studies for the state's hydropower, a chicken and egg situation exists: one cannot properly evaluate individual sites without context, and one cannot get context until enough individual sites have been studied. Because utilities as well as state and federal agencies have not called for completion of context studies, FERC relicensing projects during the 1970s and 1980s were approached on a case-by-case basis that lacked a framework for anything but meager efforts at assessment of historical resources and resulted in less than adequate hydropower resource evaluation and mitigation.

Before the 1990s, few historical studies were helpful in developing some sense of context.² But recently the independent course of scholarly historical inquiry has started addressing the issue of context,³ illustrating ever more clearly how California's electric power history involves internationally significant developments in fields such as high-head hydropower, long-distance power transmission, rural electrification, marketing, and

Coleman Power House was erected in 1911 in Shasta County, California. It was the last and largest of four powerhouses in the Battle Creek System. Its steel-framed, reinforced concrete construction differed architecturally from the other three, as did its hydraulic equipment. Instead of the usual single phase transformers, three phase transformers were located in bays on the ground floor. Drawing by Sands S. Weems IV.



facilities have been removed, and, because the management plans allow it, the California State Historic Preservation Officer, with little comment and no consideration of the importance of these resources to larger historical questions, simply issued what one SHPO staff member calls “demo memos.”¹⁰ Moreover, with these contributing resources gone, there is little to stop SCE, in the future, from using their absence, in combination with its bottom-line interests, to rationalize demolishing the rest of the resources.

It would be all too easy to cast blame on power companies for the demise of significant historical hydroelectricity resources (and they do deserve some chastening), yet power companies only have addressed the issue at all within the context of regulation. Therefore, I am convinced that crucial flaws in the FERC 106 process—lack of any requirement for developing real historical context, the toleration of historianless history, and ineffective guidelines and standards for mitigating adverse effects—must be corrected if historically significant hydroelectricity resources are to be preserved. One only hopes this will be done before the resources are gone.

Notes

¹ James C. Williams, *Energy and the Making of Modern California*

- (Akron, OH: University of Akron Press, 1997).
- ² Robert C. Catren, “A History of the Generation, Transmission, and Distribution of Electrical Energy in Southern California” (Ph.D. diss., University of Southern California, 1951); Charles M. Coleman, *P.G.&E. of California: The Centennial Story of Pacific Gas and Electric Company, 1852-1952* (New York: McGraw-Hill, 1952); Thomas Parke Hughes, *Networks of Power: Electrification in Western Society, 1880-1930* (Baltimore: Johns Hopkins), 1983.
- ³ Donald C. Jackson, *Building the Ultimate Dam: John S. Eastwood and the Control of Water in the West* (Lawrence: University Press of Kansas, 1995); William A. Myers, *Iron Men and Copper Wires: A Centennial History of the Southern California Edison Company* (Glendale, CA: Trans-Anglo Books, 1983); Williams, *Energy and the Making of Modern California*.
- ⁴ Arnita A. Jones, “Practicing History Without a License,” *The Public Historian*, 10 (Summer 1988): 59-69; Kenneth N. Owens, “Historical Resources Management in a Growth State: California” in *Cultural Resources Management*, edited by Ronald W. Johnson and Michael G.

- Schene (Malabar, FL: Krieger Press, 1987), pp. 184-186.
- ⁵ For example, Valerie H. Diamond and Robert A. Hicks, *Historic Overview of the Rush Creek and Lee Vining Creek Hydroelectric Projects* (Fair Oaks, CA: Theodoratus Cultural Research for Southern California Edison Company, 1988).
- ⁶ Thomas T. Taylor, “Cultural Resources Management Plan for Southern California Edison Company’s Kern River No. 3 Hydroelectric System, Kern and Tulare Counties, California, FERC Project No. 2290” (Rosemead, CA: Southern California Edison Company, May 1991).
- ⁷ “The Secretary of the Interior’s Historic Preservation Professional Qualification Standards,” *Federal Register*, June 20, 1997 (62 FR 33707).
- ⁸ Robert Clerico and Ana Beth Koval, *An Architectural and Historical Evaluation of Structures Associated with the Bishop Creek Hydroelectric Power System, Inyo County, California* (Silver City, NV: Intermountain Research for Southern California Edison Company, 1986), National Archaeological Data Base Document No. WRO-CA-08-1160161. “Continuity of use” as it evolved at SCE is described in Duncan Hay, *Hydroelectric Development in the United States, 1880-1940* (New York: Edison Electric Institute, 1991), v. 1, Appendix B.
- ⁹ David R. M. White, “Proposed Management Plan for Historic and Archaeological Resources Associated with the Historic and Archaeological Preservation Plan for the Bishop Creek Hydroelectric Project (FERC Project 1394), Inyo County, California,” (Rosemead, CA: Southern California Edison Company, January 1989) and “Management Plan for Historic and Archaeological Resources Associated with the Rush Creek

Continued on p. 52

Departments

LOCAL NEWS

TRIBAL NEWS

BULLETIN BOARD

INFORMATION TECHNOLOGY

WASHINGTON REPORT

—continued from page 6

Hydroelectric Project (FERC Project No. 1389), Mono and Inyo Counties, California," (Rosemead, CA: Southern California Edison Company, April 1990).

- ¹⁰ Thomas T. Taylor to Cherilyn Widell, SHPO, January 6, 1997. On file with FERC Project Nos. 1389 and 1394, California State Office of Historic Preservation, Sacramento.

James C. Williams is author of Energy and the Making of Modern California (University of Akron Press, 1997). He teaches history at De Anza College in Cupertino, California, and also is a historical consultant.

The author wishes to thank William F. Willingham, U.S. Army Corps of Engineers, for his comments on an earlier version of this essay.

A New Look for the Commandant's House, Charlestown Navy Yard, Boston NHP

Gay E. Vietzke

The Commandant's House at the Charlestown Navy Yard, Boston National Historical Park, was recently turned into an interior design show place and then returned to the park wearing its made over finishes. In this day of limited federal funding and directives toward entrepreneurial practices, Boston National Historical Park found a way to have the neglected and shabby interiors of the Commandant's House redone without the benefit of NPS dollars. And yet, continued criticism from preservationists inside and outside the NPS about the manner in

which the work was accomplished merits an examination of why the park did what it did and what results were achieved.

The Commandant's House was built in 1805, and is the oldest surviving structure in the Charlestown Navy Yard, a National Historic Landmark. The House was built to house the Navy's highest-ranking officer in the Yard, and later in the First Naval District. The house's first resident was USS *Constitution's* first captain and the commanding officer of the Navy Yard in the early 1800s, Samuel Nicholson. Primarily designed in the Federal style, the house boasts elliptical double parlors and beautiful woodwork carved with laurel wreath motifs. It has hosted many important guests, including James Monroe, Andrew Jackson, and the Marquis de Lafayette. Since 1974 when the Navy Yard closed, the house has been part of Boston National Historical Park. For several years, the park used the house as a historic house museum, presenting the interiors as c.1974 and interpreting the various Commandants' residencies in the Navy Yard. However, the house wasn't well visited, incomplete documentation and furnishings made the interiors feel sterile, and the house lacked integrity. The park decided to re-think the house's use. During a General Management Plan (GMP) revision in the mid-1980s, the park decided that the house should not be a museum, but rather, it should be used for functions and meetings, a use that continued the tradition of entertaining in the home started by its first occupants. Since then, the house has hosted about 12 events annually, most of which are co-hosted by the

NPS and a community group or park partner.

In May of 1997, the Junior League of Boston approached the park about using the house as its 1998 Decorators' Show House. The Junior League selects a property annually to be transformed into a show place for interior design. In a period of six months, they redo the house, bring 30,000 people through the building, and then move out and repair/restore the building to the "owner's" specifications. Although the park had



invested over one million dollars in the house's exterior and roof, the interiors had been long neglected. Plaster walls were severely cracked, floors were covered with soiled carpets to hide the need for sanding and refinishing, and layers and layers of beige paint masked the beautiful woodwork. With no funding in sight for a needed facelift, the Junior League's offer seemed intriguing.

The Show House process followed a relatively simple and proven formula. The Junior League of Boston invited several hundred decorators to tour the house in December. Within days, each dec-

The Commandant's House at the Charlestown Navy Yard, Boston, Massachusetts.

This former linen closet had suffered significant water damage. This is the condition of the room when the decorators first saw it in December 1997. Photo courtesy Sam Gray Photographer and Gerald Pomeroy Design.



orator submitted proposals for how he/she would decorate a specific room. A committee of League members reviewed the proposals and selected one for each space in the house. Each selected decorator was informed and allowed to measure his/her room in January. Construction began in February. The decorators were responsible for doing anything necessary to their space to create their desired effect including re-plastering walls, refinishing floors, painting, wallpapering, electrical upgrade, etc. The house opened around the first of April to the press and special guests. Preview tours and general admission followed. The house closed before Memorial Day and was cleaned out and returned to the park's control by early June. During this final phase, the owner (the NPS in this case) retains the right to have the house returned to the way it was before Show House or to keep any wall or ceiling finishes introduced during the re-decoration.

Considering the Commandant's House's deteriorated circumstance, the park knew that the house would be in superior condition after Show House. Further, the park hoped to bring a new audience of users to the house and the park—and Show House publicity would certainly do this. The cosmetic facelift was important for making the house attractive for meetings and receptions. Its dilapidated appearance had become an embarrassment and certainly lim-

ited the types of users for the property. Moreover, the Junior League promised to upgrade the electrical system in the house. With the electrical upgrade, the park would have lighting for exhibits, the potential for a sound system, and enough power in the house to serve any caterer's needs. Indeed, the electrical upgrade would provide greater flexibility of use. The park developed a detailed list of restrictions for the decorators. This list outlined exactly what changes were appropriate and inappropriate to the house. For instance, the park specified that no original woodwork could be removed or altered—painting and gilding woodwork was allowable. Any specific requests to do things outside of the restriction list were reviewed by the park's 106 Committee. It was determined that certain rooms retained so little integrity that intrusive alterations were acceptable—recessed lighting was allowed in one room on the first floor that had been significantly altered over the years. Recessed lighting was not allowed anywhere else in the house.

The park estimates that the house received about \$200,000 in overall improvements and preservation work during the re-decoration. It was decided that almost all the new wall treatments, including a wall mural of 19th-century Charlestown in the second floor hall would be retained. Although none of the new finishes are historic, the fresh coat of paint leaves the building fresh and far more presentable for public functions. Nearly 30,000 visitors came to the Navy Yard because of the Show House and most had never visited the park previously. The house received tremendous publicity, all positive, including upcoming layouts in *Traditional Home* and *House Beautiful*. The park's Superintendent, John Burchill, has called the Show House "a win-win" for all involved.

The park has proven that the Decorators' Show House was a way to get the interior spaces redone at no cost to the government.

Moreover, the house, while certainly historic, had been identified in the park's GMP for adaptive reuse as a function space. Indeed, while serving as home for the Commandant of the First Naval District, it was a place for entertaining dignitaries and celebrating the Navy's achievements. Throughout the Show House process, photographs and videotape were used to document what was being done to the property. Few changes constituted more than cosmetic alterations and those situations were carefully reviewed. At the conclusion of the process, the park has a facility far better suited to the purpose outlined for it in the GMP, which promotes "increased public use of the building for functions such as receptions, temporary exhibits, small meetings and special events."* The community has expressed renewed interest and pride in the building, and the local preservation groups even raised \$15,000 to buy new light fixtures and draperies for the now grand-again interiors.

It is easy to suggest that the Show House improvements were not made to preservationists' standards and that the NPS should never have turned over such an important building to a volunteer group—a non-preservation organization—for this type of work. And yet, the house would have never received this sort of attention otherwise. It would have continued to deteriorate and the work would



Designer Gerald Pomeroy transformed the closet into the "Commandant's Retreat." This room exemplifies the type of transformations many rooms underwent. Photo courtesy of Sam Gray Photographer and Gerald Pomeroy Design.

never have been completed so comprehensively. The process certainly wasn't perfect, and it was difficult for the park to manage because the NPS did not have control of the property during the work. However, the end result is what the park hoped for—revivified interiors appropriate for the type of functions held in the building.

Note

* Charlestown Navy Yard: Boston National Historical Park General Management Plan, Volume II Revision, Part B, (Boston: National Park Service, 1988), 4.

Gay E. Vietzke is Supervisory Museum Curator, Boston National Historical Park, Charlestown Navy Yard, Boston.

PRESERVATION RESOURCES

Reviews

Cast-Iron Architecture in America: The Significance of James Bogardus by Margot Gayle and Carol Gayle, New York: W. W. Norton & Company, 1998.

Reviewed by Antoinette J. Lee, Special Projects Director, Heritage Preservation Services, National Park Service.

In the early 1970s, the preservation of Victorian-era buildings and structures was considered somewhat avant-garde and daring. Back then, superhuman efforts were required to persuade city administrators and the public that mid-19th-century cast-iron buildings were significant and worthy of preservation. Alas, too many of these important antecedents to the tall buildings of the late part of that century have been demolished. Many of those that were preserved, however, owe their survival to Margot Gayle and her colleagues in the Friends of Cast-Iron Architecture

and in the Victorian Society in America.

This book, *Cast-Iron Architecture in America: The Significance of James Bogardus*, is the culmination of Margot Gayle's long and distinguished career as a preservation activist and leaves an important record of her tireless efforts on behalf of cast iron buildings and in securing the legacy of the originator of the building type, James Bogardus. She co-authored this book with her historian daughter, Carol Gayle.

Prefaced by a short essay prepared by architect and preservation compatriot Philip Johnson, the book focuses on Bogardus's career, which spanned the decades just prior to the Civil War. Bogardus and his fellow inventors were the mid-19th-century counterparts to the computer and telecommunications entrepreneurs of our own age. They placed themselves squarely in the circle of thinkers and promoters who shaped the future. They invented new machinery and implements that made the production of agricultural and industrial goods more efficient. In short, their inventiveness generated much of the increase in the wealth of the nation at mid-19th century.

Bogardus was born in 1800 in Catskill, New York. His apprenticeship to a local watchmaker set him on his way to experimenting with mechanical implements. Finding greater opportunities in New York City, he moved there in the late 1820s and became connected with organizations of learned and progressive businessmen. In short order, he invented and obtained patents for clocks, spinning machinery, grinding mills, and gas meters, among other items. A four-year sojourn in England and the Continent introduced him to the widespread use of cast iron in buildings and engineering structures. In Italy, Bogardus also came to appreciate classical and Renaissance architecture. Armed with this new knowledge, he returned to

New York to marry the new technology with historic building forms.

By the late 1840s, Bogardus began producing cast-iron buildings that imitated stone in New York City. These early buildings used readily replicable and mass-produced cast-iron elements and could be erected on the building site within a matter of days. When compared to the usual period of months required to construct stone and brick buildings, Bogardus's product seemed miraculous. Over the next decade and a half, Bogardus produced cast-iron buildings in New York City, Baltimore, Philadelphia, Washington, DC, and Charleston. He and his competitors in the cast-iron building trades also produced commercial buildings in such quantity and in such dense concentrations that many cities, such as New York, Philadelphia, and St. Louis, possessed veritable "cast-iron districts" by the late 1870s. By that time, steel and wrought iron frames had come into use and superseded cast-iron in moving the urban skyline ever higher.

In order to gain public acceptance of cast iron used to replicate the qualities of stone, Bogardus was an effective advocate and proselytizer. His treatises were intended to inspire confidence in the building material and in his ability to satisfy client demands. His buildings carried foundry plates testifying to his role as "originator and constructor of iron buildings." These efforts were necessary in order to overcome fears about the combustibility and stability of cast iron structures and address concerns about the aesthetic merits of iron imitating stone.

By the end of his career, Bogardus was regarded as a major American inventor. In a large oil painting called "Men of Progress," painter Christian Schussele included him in a pantheon of other inventors, including Samuel Colt, Cyrus McCormick, and Charles Goodyear. Executed between 1857 and 1862, the paint-