FINAL REPORT
NATIONAL REGISTER OF HISTORIC PLACES
ELIGIBILITY EVALUATION AND CULTURAL RESOURCES ASSESSMENT FOR THE GOWANUS CANAL,
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
IN CONNECTION WITH THE PROPOSED ECOSYSTEM RESTORATION STUDY

Contract Number: DACW51-01-D-0017
Delivery Order No. 0027

Prepared for:
U.S. Army Corps of Engineers
New York District
26 Federal Plaza
New York, New York 10278-0090

Prepared by:
Hunter Research, Inc.
Raber Associates
Northern Ecological Associates, Inc.

MAY 2004 [REVISED DECEMBER 2004]
NATIONAL REGISTER OF HISTORIC PLACES ELIGIBILITY EVALUATION
AND CULTURAL RESOURCES ASSESSMENT FOR THE GOWANUS CANAL
BOROUGH OF BROOKLYN, KINGS COUNTY, NEW YORK
IN CONNECTION WITH THE PROPOSED ECOSYSTEM RESTORATION STUDY

FINAL REPORT

Contract Number: DACW51-01-D-0017
Delivery Order No. 0027

Prepared for:
U.S. Army Corps of Engineers
New York District
26 Federal Plaza
New York, New York 10278-0090

Prepared by:
Hunter Research, Inc.

Richard W. Hunter
Principal Investigator
Raber Associates
Northern Ecological Associates, Inc.

MAY 2004 [REVISED DECEMBER 2004]
This report describes an evaluation of the eligibility for inclusion in the National Register of Historic Places and a cultural resources assessment for the Gowanus Canal and Bay, Brooklyn, New York. The work was undertaken in support of a feasibility study of ecosystem restoration of Gowanus Canal and Bay (formerly Gowanus Creek). The scope of work included background research, acquisition of historic maps, field investigations, data analysis and report preparation. These investigations were mandated under Section 106 of the National Historic Preservation Act of 1966, as amended, and as implemented by 36 CFR 800, the Advisory Council on Historic Preservation’s Procedures for the Protection of Historic and Cultural Properties. This work was undertaken for the New York District, Corps of Engineers under Contract No. DACW51-01-D-0017, Delivery Order No. 0027. Work was performed by Hunter Research, Inc., and Raber Associates. Hunter Research served as the principal cultural resource consultant reporting to Northern Ecological Associates, Inc., the overall project prime consultant.

The Gowanus Canal, created in the middle of the 19th century by bulkheading and dredging a tidal creek and wetland, quickly became a busy arm of New York harbor, the destination for building materials and fuel that went into the blocks of new houses built on the filled land behind it. It was also the final resting place for tons of household and industrial waste, and before the end of the century the public was clamoring for it to be filled. Instead, a pumping station at the head of the canal and a flushing tunnel under Degraw Street, completed in 1911, sent canal water into the Upper Bay until the pump was disabled in 1960. Because of its role in the development of Brooklyn from rural backwater to major city, the Gowanus Canal is recommended as eligible for inclusion in the National Register as an historic district. In addition to the waterway and the associated pumping station and flushing tunnel, two bridges and five buildings adjacent to the canal contribute to its significance and are considered part of the district, as are the sites of the filled 1st Street and 5th Street basins.

Ecosystem restoration projects, specifically bank softening and habitat creation, have the potential to adversely affect the eligible resource. Adverse effects, if unavoidable, can be mitigated by a combination of photographic recording and archaeological excavation and/or monitoring.
A. FIELD METHODS

The study area was visited twice in the course of this investigation. On November 5, 2003 staff from Hunter Research, Raber Associates and the U. S. Army Corps of Engineers traveled the entire navigable length of the main canal at low tide on the Corps vessel Hocking, as far as a floating boom north of Union Street. The less navigable 4th Street basin was also inspected to its terminus at the Third Avenue bridge in a Corps Boston whaler. The canal, its related features such as bridges, and canal-side environs were recorded with field notes and approximately 150 digital and 35mm. photographs.

This field visit was complemented by a land-based survey on January 9, 2004 by Hunter Research, accompanied by Corps staff. The purpose of this visit was to inspect and photographically record those buildings having direct historical links to the Canal and its role in the development of South Brooklyn. A total of seven sites emerged from this two-pronged survey approach, discussed below in section C.

1. Canal Alignments

The canal can, somewhat arbitrarily, be divided into three types of alignments which have different degrees of integrity:

❖ Outshore of Hamilton Avenue, the canal channel extended approximately 1100 feet to a point opposite Percival and 17th streets, and widened from 100 to 300 feet. Although it is difficult to determine the nature and extent of bulkheading in this section by 1870, when the Gowanus Canal Improvement Commission ceased work, historical maps suggest that bulkheads totaling approximately 2,150 linear feet were in place by 1880 (Bromley and Robinson 1880; Sanborn Map and Publishing Company 1886). Except for a 200-foot-long section of shoreline cut back on the east side of the channel circa 1980-1995, the outer canal channel configuration remains intact. For the present study, review of bulkhead conditions in this section began at about 16th Street, and included a total of approximately 1,460 linear feet which retains historical alignments.

❖ The main section of canal, completed by 1870 from Hamilton Avenue to a point between Douglass and Butler streets, retains all of it original alignment and 100-foot wide channel. The channel is approximately 5,470 feet long and includes 11,200 linear feet of bulkhead.

❖ The six private basins, built off the east side of the main canal circa 1868-1915, originally had channels totaling approximately 2,800 feet in length with about 6,200 linear feet of bulkhead. The 1st and 5th Street basins were filled in circa 1953-

B. ANALYSIS AND INTEGRITY OF THE GOWANUS CANAL AS A WATERWAY

Field data and a recent aerial photograph were used to compile a graphic inventory of existing canal conditions (Figure 3.1). Comparison of this inventory to historical maps, information on canal construction discussed in Chapter 2, and available information on comparable bulkhead structures allowed for a detailed appraisal of canal integrity.
1965, leaving approximately 1,990 feet of channel and 4,365 linear feet of bulkhead, or about 70% of the original basins (see above, Figure 2.10; U.S. Army Corps of Engineers 1953, 1965).

Over 90% of the original Gowanus Canal alignments thus remain open as waterways, although navigability varies considerably within these channels. The 4th Street basin is the least navigable section.

2. Canal Bulkheads

There appear to be three principal types of canal bulkheads, in varying conditions:

❖ Timber cribwork, in many places with upper sections deteriorated, replaced with concrete, and/or covered with rip-rap;

❖ Concrete bulkheads or relieving platforms, including all five bridge abutments; and

❖ Sheet piling of timber or steel.

Although canal history reviewed in Chapter 2 indicates timber sheet piling was common from the earliest period of construction in the 1850s into the early 20th century, it appears that timber cribwork was the preferred and principal type of Gowanus Canal bulkhead beginning in the mid 1860s, and probably replaced most of the early sheetpile construction. All or virtually all of the present timber sheetpile walls appear to be of 20th-century vintage. As summarized below, cribwork comprises over 70% of remaining bulkheads, even where modified or not visible at low water.

a. Timber Cribwork Context

From the colonial period until circa 1930, much bulkhead construction throughout the Port of New York involved timber cribwork. When timber was relatively inexpensive, cribwork was a cheap form of bulkhead requiring only hand tools after any dredging phases. Until perhaps the second quarter of the 19th century, timber bulkhead construction was diverse, and remains incompletely documented with no well-defined regional patterns. Fill materials occasionally included wooden vessels (e.g., Louis Berger & Associates, Inc., 1990). By the mid-19th century, there was probably more design standardization. Cribwork construction of the mid-19th century and later involved spiking together logs in alternating perpendicular rows forming square or rectangular cells. Arranged in lines or grids, these cells commonly measured five to eight feet on a side, and from about seven to eight feet in height. Empty cribwork units could be floated into place and sunk as fill was added. Some cells, probably at the bottoms of cell units, had plank flooring to hold enough fill material to sink the structure; builders added more fill once the cells were in place to form a solid bulkhead. Cribwork often reached to between 20 and 25 feet below mean low water, and extended to about 10 feet above this elevation. In section, cribs below mean low water typically extended to widths of 20 to 25 feet, sometimes tapering on the exterior or both faces as they rose. Above mean low water, crib widths in section narrowed to about 15 feet. These dimensions apply to average traffic and harbor bottom conditions; some railroad piers carrying heavier loads included cribwork 55 feet wide at bottom, 40 feet wide at top and over 40 feet high. Fill material in cribwork bulkheads extended behind the timbers to the height of the bulkhead, and aside from dredged sand and silt could include demolition debris and stone. Being very open sided, cribwork construction worked best with coarse fill. Square timbers, spiked or bolted together in a smooth, continuous face and fitted onto notched cribwork logs, formed the outer face of the bulkhead above mean low water in most cases. Stone faces were far less common. The upper horizontal surface of the bulkhead varied from packed earth to timber or stone. Although this study found limited documentation of Gowanus Canal timber bulkheads, the chronol-
Figure 3.1: Gowanus Canal Assessment of Eligibility: Aerial Photograph Showing Existing Wall Conditions on the Gowanus Canal. Source: U.S. Army Corps of Engineers, 2003

**KEY TO BULKHEAD TYPES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-I</td>
<td>Timber Cribwork with Intact Faces above mean low water</td>
</tr>
<tr>
<td>TC-N</td>
<td>Timber Cribwork with New/Recent sections above mean low water</td>
</tr>
<tr>
<td>TC-D</td>
<td>Timber Cribwork with Deteriorating but visible sections above mean low water</td>
</tr>
<tr>
<td>TC-C</td>
<td>Timber Cribwork with Collapsed sections above mean low water</td>
</tr>
<tr>
<td>TC-CON</td>
<td>Timber Cribwork with Concrete replacement/infill above mean low water</td>
</tr>
<tr>
<td>RIP</td>
<td>Rip-rap slope, probably on timber cribwork collapsed above mean low water</td>
</tr>
<tr>
<td>CONC</td>
<td>Concrete wall or relieving platform</td>
</tr>
<tr>
<td>SSP</td>
<td>Steel Sheet Piling</td>
</tr>
<tr>
<td>TSP</td>
<td>Timber Sheet Piling</td>
</tr>
</tbody>
</table>
ogy of canal construction and surface inspection suggest the canal’s timber cribwork walls followed the typical designs outlined above. Cribwork installed for some of the private basins were reported as being 20 feet wide at bottom, reaching five feet above mean high water (Brooklyn Eagle 1870b; Greene 1917: 52-56; Raber et al. 1983: 46-51). Repairs to Gowanus Canal cribwork above mean low water during the last half century have included infill with concrete blocks or poured concrete.

It is usually difficult to date cribwork bulkheads without documentary evidence or archaeological recovery of some types of fill (e.g., demolition debris). For the era prior to more standardized designs, variations in timber joining methods have been identified as sources of potentially significant information (Louis Berger & Associates, Inc., 1990). For all periods, cribwork bottoms should also be regarded as especially important. Cribwork bulkheads were most secure when fitted to bedrock or other very hard bottoms. If not soundly installed—as was often the case with smaller private waterfront development projects—cribwork in bulkheads or in block-and-bridge piers tipped or sank. Building in sand or silt bottoms, where bedrock or clay was more than about 25 feet below mean low water, required dredging and other construction bottom surface preparations to counteract these problems, steps usually characteristic of only larger commercial or industrial ventures. Piles driven below cribwork sometimes sufficed in deep or soft bottoms, as did continuous rows of logs across the bottom of the cribwork. Cribwork bottoms are highly variable, poorly documented, and tend to remain well preserved under water. By contrast, periodic replacement of all components subject to decay above mean low water complicates any identification of extant cribwork bulkheads with particular decades, and minimizes the significance of these upper elements (Greene 1917: 52; Raber et al. 1983: 46-51). All available accounts of Gowanus Canal wall construction, including some for concrete bulkheads, indicate that the canal walls rested on piles driven into clay below silty marsh deposits (e.g., Brooklyn Eagle 1869a; Stiles 1926). Dredging may have accompanied some of this construction.

b. Concrete and Steel Bulkheads

In some places, low-water surface inspection was inconclusive as to whether visible concrete walls were resting on cribwork foundations or were entirely concrete bulkhead resting on piles. In many parts of the Port of New York, concrete bulkheads were relieving platform designs, first developed in this region shortly after 1900 by some of the railroads and perhaps derived from the masonry river walls of the Department of Docks. A major advantage of this form was its fire resistance, since timber elements above mean low water were replaced by concrete and fill material. Typical examples consisted of pile-supported timber and/or concrete sub-decks below mean low water, above which concrete block formed the bulkhead face and supported the outer edge of an upper concrete deck or paving; the space between the two decks was earth fill. In some areas, such as the Brooklyn waterfront south of Fulton Street repaired by the New York Dock Company circa 1915-1950, concrete bulkheads were appended to older cribwork in several ways. The new work generally extended beyond the old about 20 feet, and often included riprap in front of the cribwork and among the new piles to preclude cribwork slumping. For cribwork bulkhead repair, there were varied means of actually tying the new work to the old. The new piles could be driven in front of the cribwork, or through it, with some or all of the relieving platform resting on cribwork remains. Later in this period, steel sheet piling driven behind the new piles gave added stability to the interface, with the steel piling tied back to concrete blocks at the rear of the upper deck. Steel piling tended to replace the timber pile supports and the subdecks completely after World War II, in the form of inner
and outer sheetpile surfaces tied to each other, or an outer surface tied to a new anchor pile. Repairs over the last half century have also included use of steel H-piles under relieving platforms. Given their extensive documentation in published and unpublished engineering sources, and their very wide distribution in the Port of New York, 20th-century bulkhead structures are usually not eligible for the National Register of Historic Places unless associated with other significant resources (Raber et al. 1983: 51-4, 70-2; 1984).

The Gowanus Canal was too narrow to allow for appending relieving platforms to the front of older cribwork, but it is possible that relieving platform variations were installed on cribwork sections cut down to mean low water (e.g., Plate 3.1).

c. Inventory of Bulkhead Conditions

Table 3.1 summarizes existing bulkhead conditions based on low water inspection. Bulkhead locations are shown in Figure 3.1. Bulkheads with confirmed timber cribwork components total 69% of inspected project areas, with probable cribwork foundations covered with rip-rap comprising another 4% (Plates 3.2 to 3.9).

3. Flushing System

As discussed in Chapter 2, much of the original operating equipment at the Gowanus Canal pumping station was removed or refurbished in the late 1990s, but the two original buildings are otherwise intact. Except for two or three locations in the flushing tunnel repaired with concrete or shotcrete at this time, the original brick tunnel is also intact (Plate 3.10; City of New York 1999; Rakos 2002; personal communication, Lynn Rakos).

4. Bridges

As discussed in Chapter 2, all local road bridges over the main line of the Gowanus Canal have been substantially rebuilt within the last sixty-five years except the restored 1889 retractile crossing at Carroll Street, a New York City Landmark and eligible for the National Register of Historic Places (Plate 3.11). The other four road bridges have recently been determined not eligible for the National Register (Parsons Brinckerhoff Quade & Douglas, Inc. 2003).

The Third Avenue Bridge was heavily rebuilt in 1889 but retained the same navigable width between longer, higher abutments, as described in Chapter 2. This bridge, which once separated the 4th and 5th Street basins and is now the extreme eastern end of Gowanus Canal waters, remained an important component of local navigation until after World War II. Although the roadway and perhaps the deck supports have been altered since 1889, the abutments appear to date from this reconstruction (Plate 3.12).

The dense industrial landscape and marshy substrate of the canal vicinity led to construction of two high-level canal crossings: the 1933 IND steel trestle for the Smith-9th Street Station on the F and G lines, and the Gowanus Expressway built circa 1947-1964. The 4,400-foot-long trestle, built over the 9th Street Bridge with much concrete-covered steelwork, reaches over 100 feet high and includes a truss section above the canal. The expressway, built over the Hamilton Avenue Bridge on arched concrete piers, is about the same height (Plates 3.13 to 3.16).

5. Summary of Canal Integrity

As a historical waterway, the Gowanus Canal retains over 90% of its original channel design, locations and widths, including 100% of the original main canal. More than two-thirds of the channel walls are timber

<table>
<thead>
<tr>
<th>BULKHEAD TYPES</th>
<th>MAIN CANAL</th>
<th>BASINS</th>
<th>HAMILTON AVE--16th STREET</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMBER CRIBWORK: INTACT OR NEW</td>
<td>4800 ft (42%)</td>
<td>2420 ft (55%)</td>
<td>340 ft (23%)</td>
<td>7560 ft (44%)</td>
</tr>
<tr>
<td>TIMBER CRIBWORK: COLLAPSED OR DETERIORATING</td>
<td>1340 ft (12%)</td>
<td>1350 ft (31%)</td>
<td></td>
<td>2690 ft (16%)</td>
</tr>
<tr>
<td>TIMBER CRIBWORK: CONCRETE INFILL/REPLACEMENT ABOVE MEAN LOW WATER</td>
<td>1310 ft (12%)</td>
<td></td>
<td>200 ft (14%)</td>
<td>1510 ft (9%)</td>
</tr>
<tr>
<td>RIP-RAP ON PROBABLE DETERIORATED TIMBER CRIBWORK</td>
<td>180 ft (2%)</td>
<td>520 ft (36%)</td>
<td></td>
<td>700 ft (4%)</td>
</tr>
<tr>
<td>SUBTOTAL: KNOWN/PROBABLE TIMBER CRIBWORK</td>
<td>7630 ft (68%)</td>
<td>3770 ft (86%)</td>
<td>1060 ft (73%)</td>
<td>12,460 ft (73%)</td>
</tr>
<tr>
<td>CONCRETE/BRIDGE ABUTMENTS</td>
<td>1580 ft (14%)</td>
<td>75 ft (2%)</td>
<td></td>
<td>1655 ft (10%)</td>
</tr>
<tr>
<td>TIMBER OR STEEL SHEET PILING</td>
<td>1990 ft (18%)</td>
<td>520 ft (12%)</td>
<td>400 ft (27%)</td>
<td>2910 ft (17%)</td>
</tr>
<tr>
<td>TOTALS</td>
<td>11,200 ft (100%)</td>
<td>4365 ft (100%)</td>
<td>1460 ft (100%)</td>
<td>17,025 ft (100%)</td>
</tr>
</tbody>
</table>
Plate 3.1. Gowanus Canal Assessment of Eligibility: View south of recent bulkhead at 14th Street, with concrete face above possible cribwork cut off at the mean low water mark (Photographer: Thomas Flagg, November 2003).
Plate 3.2. Gowanus Canal Assessment of Eligibility: View southeast of the 11th Street basin (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.3. Gowanus Canal Assessment of Eligibility: View northeast of intact timber cribwork bulkhead near the head of the 7th Street basin (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.4. Gowanus Canal Assessment of Eligibility: View east towards the head of the 6th Street basin (right of view) and Bond Street (right background), with concrete bulkhead and gas pipe tunnel crossing (left of view) and intact timber cribwork bulkhead (right of view) (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.5. Gowanus Canal Assessment of Eligibility: View southeast of the 6th Street basin. A steel sheetpile bulkhead is seen at the right of the view, with a collapsing timber bulkhead visible beyond (center right of view). An intact timber bulkhead (center left of view) and a steel bulkhead (left) can also be seen (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.6. Gowanus Canal Assessment of Eligibility: View northeast at Bond Street, showing several types of concrete bulkheads of concrete additions to timber cribwork bulkheads. The circa 1900 building at the center of the view was formerly used by an ice company and a brewery, but probably not serviced by the canal (Photographer: Thomas Flagg November 2003) [Source: Raber Associates].
Plate 3.7. Gowanus Canal Assessment of Eligibility: View east of steel sheetpile bulkhead and crushing plant at the junction of the main canal (left of view) and the 4th Street Basin (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.8. Gowanus Canal Assessment of Eligibility: View north of deteriorating timber cribwork bulkheads at the end of 2nd Street, with the surviving component of the circa 1918-21 Foreman Blades Lumber complex visible in background (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.9. Gowanus Canal Assessment of Eligibility: View northwest of the intact timber crib-work bulkhead at the end of 1st Street, with a 1916 concrete oil terminal structure (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.10. Gowanus Canal Assessment of Eligibility: View northeast towards the end of the canal, with timber sheetpile (right) and steel sheetpile (left center) bulkheads, and concrete bulkhead at the end of the canal (left) (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.13. Gowanus Canal Assessment of Eligibility: View northeast of the Gowanus Canal, 9th Street bridge and the trestle for the F and G Trains. 1952. Taken from the new Gowanus Expressway overpass, this view also includes the Cirillo Bros. Coal & Fuel Co. at left, Cranford Co. concrete & asphalt plant at left just beyond covered lighter in 11th Street Basin and a number of tugboats, covered lighters, and hold barges. Source: Brooklyn Public Library.
Plate 3.14. Gowanus Canal Assessment of Eligibility: View northeast near the 11th Street basin showing concrete additions to the cribwork bulkhead face (left) and new timber face on cribwork bulkhead (right). The New York Transit Authority trestle is visible in the background (Photographer: Thomas Flagg, November 2003) [Source: Raber Associates].
Plate 3.15. Gowanus Canal Assessment of Eligibility: View North of the former S.W. Bowne grain warehouse (Photographer: James Lee, November 2003) [HRI Neg. # 03070 D1-02].
cribwork, with portions below mean low water most likely dating to canal construction beginning circa 1866 and ending sometime in the early 20th century. The general design, materials, and workmanship of the canal walls through the waterway’s industrial history retain much integrity from this era. The substantially intact 1904-1911 flushing system, although not a complete success during the industrial period of canal history, contributed to canal operations and maintenance of local health. Two bridge crossings, at Carroll Street and Third Avenue, retain most or all of their integrity from the period of active canal industrial use. The other four local bridges no longer have this character, and the two high-level crossings have limited direct association with the canal except as part of a more general set of construction obstacles within the former Gowanus Creek drainage.

C. HISTORIC SITES AND STRUCTURES ALONG THE CANAL (FIGURE 3.2)

1. Site of Denton’s Mill (Yellow Mill)

Denton’s Mill was mapped as late as 1849 (and sketched in 1850) just before it was engulfed by onrushing development. It was about a half-block east of the main stem of the canal, south of Carroll Street.

The site today is occupied by a modern, three-story metal-sided building (Plate 3.17). Fire insurance maps show that by 1886 the site was occupied by the Watson and Pittinger Lumber Yard (whose facility also occupied the opposite bank of the canal, below Carroll Street) and the “Philp” (sic) Paper Mill, the latter named in 1889 by the Gowanus Canal Commission as the canal’s sixth greatest polluter. By 1904, the paper mill had been replaced by the Loomis lumberyard; in 1915 this company also occupied what had been Watson and Pittinger’s. The 1938 map shows what appears to be the present building on the Watson and Pittinger’s site, its occupant engaged in the manufacture of printing ink, and the paper mill site held a sand and stone dealer. By 1950 the sand and stone dealer was gone. The 1969, 1977, 1986 and 1996 maps show a plastics company in the ink manufacturer’s building.

Given the site’s history of redevelopment, not surprisingly no surface indications of the mill or dam were noted. The building on the site is architecturally undistinguished.

2. Site of Freeke’s Mill (Old Gowanus Mill)

By reference to the maps discussed in the previous chapter, and information provided by 19th century historians, Freeke’s Mill is believed to have stood just north of Union Street, probably either where the canal main stem now flows and/or on the east bank. The site is shown in Plate 3.18.

The mill was standing at the time of Lossing’s visit in 1850, but he refers to its destruction in the past tense. The site was mapped in 1886 as “Adams’ Lime, Brick and Lath Yard,” virtually devoid of buildings. By 1904 there were buildings on the site set back from the canal; the immediate bank held “lumber in piles.” Additional detail on the 1915 map reveals this to have been a packing case manufacturer. The 1950 fire insurance map shows a “Beverage Warehouse” on the canal bank; this is apparently the structure still on the site.

As is the case at the site of Denton’s Mill, no surface indications of the former presence of Freeke’s Mill were noted. The structure is an undistinguished brick building, approximately two stories, with a band of steel-framed windows.
Figure 3.2. Gowanus Canal Assessment of Eligibility: Aerial Photograph Showing Historic Sites and Structures in the Vicinity of the Gowanus Canal. Note: For clarity only a segment of the alignment of the flushing tunnel is shown. The complete alignment is shown in Figure 2.13. Source: U.S. Army Corps of Engineers, 2003.
Plate 3.17. Gowanus Canal Assessment of Eligibility: View East on Carroll Street approximately at the site of Denton’s Mill (Photographer: Charles Ashton, January 2004) [HRI Neg.# 03070 D3-25].
Plate 3.18. Gowanus Canal Assessment of Eligibility: View Northeast approximately at the site of Freeke's Mill (Photographer: James Lee, November 2003) [HRI Neg.# 03070 D1-57].
3. Litchfield Office Building, 360 Third Avenue (corner of 3rd Street)

This small yet noticeable structure is known locally as having been the office of Edwin C. Litchfield, the power behind the Brooklyn Improvement Company (developer of much the land surrounding the Gowanus Canal) (Plate 3.19).

An 1880 atlas is ambiguous as to whether or not there is a building on the site, and Boyd’s Directory (1873) includes a listing for the Brooklyn Improvement Company at “3d c. 5th ave.” However, an 1897 directory lists the company at “3d c 3d av.” It is shown on the 1886 fire insurance map. In 1904 it was labeled “Office,” surrounded on two sides by a coal yard that fronted on the Fourth Street Basin (Bromley 1880; Boyd 1873; Lain 1897; Sanborn 1886, 1904).

Architecturally this is one of the most interesting structures in the study area, and is distinctly Renaissance Revival in feeling. It embodies many stylistic features found on the brownstone rowhouses built on Litchfield lands nearby. The building is brick with stone trim, two stories high and three wide. The visual focus of the façade is the arched central entry on Third Avenue, reached by a grand stair and framed by an Ionic portico. The cornice of the entry portico extends across the full width of the façade separating the first floor from the second. Rusticated stone quoins define the bays and the corners of the building. Windows are arched, with the exception of the central window on the second floor, which is rectangular. All are in elaborate stone surrounds. A narrow string-course connects the sills of the second floor windows. The style of the building and the appearance of the top of the building suggest that a major cornice originally capped the façade.

4. Burns Bros. Coal Pockets, Fourth Street Basin

Starkly utilitarian in their straightforward, unornamented design, this group of 18 coal storage silos stands on the south bank of the 4th Street Basin near Second Avenue and the main canal (Plates 3.20 and 3.21).

The original group of eight pockets—those nearest the basin—was built sometime between 1915 and 1924. Between 1932 and 1938, ten more were added behind the original group. All are elevated on concrete legs to provide 15 feet of clearance below. A note on the 1938 (and subsequent) insurance map indicates that there was originally an iron-clad conveyor shed atop the group, and there was an iron-clad boiler and winch house atop the pair nearest the water. The original group is 40 feet tall, the later ones 50 feet.

In 1938 there was a garage on the property between Burns Bros. and Second Avenue, but by 1950 both parcels were listed as Burns Bros. The area between the pockets and the street was occupied by “Coal piles.” By 1969 there was no mention of Burns Bros. On the map, the parcel where the pockets stand was labeled “Truck rental,” and the adjacent parcel held a Sanitation Department garage built in 1957 (Sanborn 1938, 1950, 1969).

Coal was one of the materials essential to urban life in the 19th and early 20th centuries, and was one of the major commodities that was shipped on the canal. Besides domestic heating and cooking, coal was also used to produce gas and, later, burned to generate electricity. Coal pockets were used to off-load coal from one type of vehicle—barges, in this case—and, using gravity, transfer it to smaller vehicles such as wagons or trucks for local delivery. Elsewhere in the country coal pockets typically were elevated railroad sidings designed to accommodate delivery by hopper cars, but in the case of Burns Bros., equipment pow-
ered by the boiler presumably elevated coal from barge holds into the concrete pockets, from which trucks below were filled.

5. Former Brooklyn Rapid Transit Power House, east of the canal, north of 3rd Street

This impressive brick Romanesque Revival building is a visual landmark in the canal neighborhood, looming as high as an eight-story building although the elevations reflect the three interior galleries. (Plate 3.22). It is nine bays wide on the Third Street façade, five facing the canal. Each bay is topped by a corbelled round-headed arch; corbelled quoins define the corners of the building. It is apparently unused.

The building is but a remnant of a larger complex built in 1902 and described in some detail on the 1904 Sanborn fire insurance map. This building is labeled as the Dynamo Room, with four galleries. Next to it toward the 1st Street Basin was a two-story boiler building with a coal pocket in the roof. Two more boiler buildings and a smaller dynamo building fronted on Third Avenue, and a 125-foot smokestack dominated. On the canal bank were a coal elevator and a cement coal pit, linked by tracks. A cement tunnel led from the coal pit to the larger boiler building. A note on the map described its operation: “Coal is fed automatically to boilers by chutes from coal pocket in roof of boiler ho[use]. Coal is carried to pocket by endless eye-bar cables and iron buckets through tunnel from coal pit.” The entire parcel was labeled “Brooklyn Rapid Transit R. R.” By 1915 a water softening plant had been added at the corner of 2nd Street and Third Avenue, but it was not in operation. Additional coal-handling equipment had been added canal-side, and the site was identified as “Brooklyn Rapid Transit R. R. Power Ho.” (Sanborn 1904).

By 1938 it had become the “Williamsburg Power Plant Corp. Central Power Sta.” The smaller boiler buildings were gone, the water softening plant had become a lumber company, and the smaller dynamo building was vacant. By 1950 only the existing dynamo building and the smokestack remained, although the smaller dynamo house was being used for steel drum renovating and storage by another owner. By 1969 the dynamo building stood alone, surrounded by a voltage switching yard. A new building (1959) stood on Third Avenue containing cable vaults and frequency changers. That building became the Jewish Press by 1977, leaving the massive 1902 brick building as the sole surviving structure on the site related to its power-generating past (Sanborn 1938, 1950, 1969, 1977).

Most of the area between Third Street and 2nd Street was part of the property in 1915; it was labeled “Brooklyn Rapid Transit,” and it was completely occupied by a coal pile and a conveyor. It was still a coal pile in 1938, but by 1950 contained scattered buildings.

The Brooklyn Rapid Transit Corporation, or BRT, was the forerunner of the Brooklyn-Manhattan Transit or BMT. It was a holding company, formed in 1896, and by the turn of the century owned every steam railroad, elevated line and streetcar line in Brooklyn except one (which held out until 1906). One of its primary missions was consolidation of the various lines, and this included electrification—hence the need for the large generating plant in Gowanus. The BRT was reorganized in 1923 as the Brooklyn-Manhattan Transit Corporation and was eventually subsumed (with the IRT and the IND) into the city subway system in 1940 (Feinman 2001).

The surviving remnant of the electric generating station is a highly visible landmark highlighting the consolidation of mass transit at the turn of the 20th century, just as New York City absorbed its four neighbors
to become the five boroughs. It also is related to the bulk shipment, handling and use of coal, one of the canal’s principal freights. It is also, with the Litchfield Office Building, one of the more interesting buildings architecturally in the study area.

6. Foreman Blades Lumber, west side of the canal between First and Second Streets (Plate 3.23)

Although architecturally not as striking as the BRT Power House, Foreman Blades Lumber appears to retain its integrity and is associated with another of the canal’s major freights.

Its first appearance on fire insurance maps is in 1938, when the entire block bounded by the canal, 1st, 2nd and Bond Streets was indicated as “Standard Oil Co. of N. Y.” A number of buildings were occupied by tenants. Standard Oil had been indicated as the owner of the northern half of the block in 1904 and 1915; the southern half was occupied by a dealer in building materials as early as 1886. By the time the 1938 map was published, Standard had the entire block, and it had been virtually cleared and redeveloped from its 1915 appearance. The Bond Street side of the property had an “Auto Ho.”, storage and a garage; Foreman Blades Lumber was the tenant on the canal side. A building no longer extant was directly at the edge of the canal, used for lumber storage (Sanborn 1886, 1904, 1915, 1938).

The building that survives today was identified on the insurance maps as having been built in two sections, the more southerly in 1918, the northern in 1921. Their uses were, respectively, lumber storage and as a lumber warehouse. By 1950 the Foreman Blades parcel was occupied by Phillips Paper products, and the building were being used for paper box manufacturing and a paper warehouse. The canal-side building was gone by 1969, and the two rear buildings were labeled simply “Loft.” This label persists up to the 1996 map (Sanborn 1950, 1969).

Like the Burns Bros. coal pockets, the Blades and Foreman building is associated with one of the canal’s primary uses, the bulk movement of materials that were directly associated with the growth of Brooklyn. Its utilitarian function is reflected in its design; it is a simple rectilinear concrete frame with brick curtain walls, free of ornament.

7. S. W. Bowne Grain Storehouse, west side of the canal between Bay and Creamer Streets (Plate 3.24)

This massive 4-story, 200-by-80-foot brick building is an end-gabled structure with a central transverse fire-wall and eight bays on its long side, most of which have round-arched window openings. A monitor runs the full length of the building’s roof peak. Although the storehouse’s interior was not inspected, it was almost certainly a wood-framed structure, with 12-foot ceiling heights as later reported (e.g, U.S. Army Corps of Engineers 1988). The Bowne storehouse can be dated with some precision to 1886, as the Sanborn insurance map published that year labeled it as “Grain Ware Ho. Being Built.” Into the early 20th century, the storehouse was part of a two-block-long complex of hay, feed, and grain processing facilities from Creamer to Sigourney streets, including south of Bay Street a feed mill removed circa 1904-1915 and a large 1912 hay and feed storage building (Sanborn Map Company 1904, 1915).

As originally operated, the storehouse was associated with a grain elevator on the bulkhead opposite the storehouse’s south end. The elevator, for which limited information is available, was probably equipped with grain legs to transship grain from Erie Canal barges into the storehouse, where a grain elevator at
the southeast corner probably helped move grain to a conveyor in the monitor for distribution to storage bins. The storehouse probably served for local distribution and for on-site milling. Transhipment from the storehouse to ships for export, once an important component of Brooklyn waterfront traffic as discussed below, seems less likely here because of the limited draft available in this section of channel as reviewed in Chapter 2. A horizontal conveyor between the canalside elevator and the storehouse evidently entered the latter at the fourth floor southeast corner above the windows in that bay; the present blocked-in opening at this spot may represent the former conveyor access (Sanborn Map Company 1904, 1915; Plate 3.25).

The waterside elevator stood until circa 1950-1969, but by 1938 had been converted to part of a general warehouse facility along with the rest of the complex. Demand for hay and grain had declined significantly, as cars and trucks replaced horses in the city and the port’s role in regional grain distribution declined. The two-block Bowne Company was now part of a larger “Bowne-Morton’s Stores, Inc.”, an “approved public warehouse.” The firm had another building on the west side of Smith Street, and the entire north side of Bay Street from Smith Street to Court Street. There was no mention of hay, grain, or milling in any of the building labels on the 1938 fire insurance map; the grain warehouse was no longer in specialized use, it had apparently become a general-use warehouse. By 1950, the southern part of the Bowne complex, below Bay Street, was engulfed in later buildings associated with cargo and stevedoring companies. North of Bay Street, a one-story warehouse was built between the canal and the northern part of the grain warehouse before 1950. Now gone, the eastern façade of the grain warehouse shows signs of its former location, visible from the canal (Sanborn Map Company 1938, 1950, 1969; U.S. Army Corps of Engineers 1932, 1942, 1953, 1965, 1978, 1988).

The Bowne storehouse is an unusual, probably unique example of a 19th-century Brooklyn storehouse adapted for grain handling. Brooklyn dominated the handling of bulk products in the Port of New York from the 1840s until the firm establishment of container traffic by circa 1970. For most of this period, bulk products on much of Brooklyn’s waterfront were transshipped and stored at small terminals consisting of narrow finger piers with or without piersheds, bulkheads retaining wide marginal wharf space, and masonry storehouses lining the wharves. Evolving from earlier 19th-century storehouses in Manhattan and Brooklyn, most of the classic Brooklyn storehouses were built circa 1850-1880 between Main Street and Erie Basin, with a smaller number on Smith Street and the latest examples built at Bush Terminal circa 1895-1905. They were especially notable from Atlantic Avenue to Main Street, once forming a nearly unbroken wall except around the Fulton Ferry. Typically, the storehouses were flat-roofed structures four to six stories high, 150 to 200 feet long, and 50 to 80 feet wide with three to five bays of round-arched windows on the short sides facing the water and the streets. Timber-framed with longitudinal arrays of square columns generally 15 to 18 feet apart transversely, the storehouses had timber floors, brick exteriors and party walls often made of rubble stone. The most intact examples include the Empire Stores in the project area, the former Merchants or Governors Stores on Pier 41 at the foot of Van Dyke Street, the Beard Stores (Warehouse Pier) in Erie Basin at Van Brunt Street, a smaller block of stores in Erie Basin at Richard Street, the Bowne Stores, and the brick storehouses at Bush Terminal. Less intact examples include the Tobacco Warehouse west of Empire Stores and parts of the former New York Dock Company Cold Storage Building. The Bowne storehouse, which falls within the size range of other Brooklyn stores and has the familiar round-arched window, is the only gable-roofed example in this class of building, and
also the only one oriented with the long side—and all windows—facing the bulkhead (Raber Associates 1984; Beyer Blinder Belle 1990; Parrott 2002).

The gable roof at the Bowne complex was clearly adapted to grain handling, and was in some ways a retention of a slightly earlier form of warehouse more widespread until the mid-19th century, when the dominant flat-roofed form emerged (Parrott 2002). Unlike large grain elevators built later in the 19th century to accommodate rail and marine traffic, the Brooklyn grain facilities were somewhat idiosyncratic, sometimes combining general warehouse forms with grain handling functions largely intended for export traffic, and sometimes including highly specialized structures with little resemblance to typical storehouses. Until the repeal of the British Corn Laws in 1846, export of unmilled grain remained a relatively minor feature of port activity. There were few if any specialized storage or handling facilities for grain before the Corn Laws repeal immediately quadrupled grain exports through the port, and made grain traffic to Britain a major component of transatlantic trade (Albion 1939:76-94; Anonymous n.d.). All of the port’s grain facilities developed between circa 1846 and 1922, serving either railroad car or canal boat. The Brooklyn facilities all received grain from canal boats in bulk. Three types of facilities eventually handled grain at the port, in various combinations and sequences: private grain stores (almost all in Brooklyn) with stationary wharfside grain elevators; floating grain elevators which transferred product from canal boats to ships; and grain elevators at railroad terminals. The grain stores and floating elevators appeared as soon as the Corn Laws disappeared, while the railroad elevators did not start to rise above the port’s shores until the late 1870s. The grain stores disappeared by circa 1915 after the virtual disappearance of the canal grain traffic which supported the grain stores, and the sharp decline in the port’s share of export grain traffic. The railroad and floating elevators retained the remaining traffic. The New York State Barge Canal grain elevator completed in 1922 in Gowanus Bay was part of an attempt to re-direct the port’s grain traffic, and was something of an anomaly in being a large grain elevator designed for canal traffic. Early 20th-century changes in overseas grain shipping patterns highlighted a fundamental lack of grain handling development that had been a growing problem in the Port of New York for a quarter century. With essentially no improvements in grain facilities after 1922, competition from other ports significantly reduced grain traffic following a relatively brief surge of Canadian grain exports through the Port of New York during and after World War I (Anonymous n.d; see Raber et al. 1984: 95-104 for discussion of Brooklyn export grain facilities).

Located where ship traffic was probably made difficult by limited dredging efforts, the Bowne complex was most likely used only for local distribution, as noted above. This may explain its orientation parallel to the nearest street, to facilitate wagon loading rather than marine transshipment.

Today the building is one of the few distinctly 19th-century structures on the canal banks. It retains its brick exterior with shutters at the few wall openings, and no major additions or alterations are visible from the exterior. The former Bowne Grain Warehouse typifies the canal’s role in importing bulk goods into the city, and was built just as the canal was nearing its peak. The company’s fortunes followed those of the urban hay and feed trade, but today the warehouse is one of the most visually intact canalside structures linked to the canal’s role in the growth of Brooklyn.

8. Third Avenue Bridge

The Third Avenue Bridge crosses the canal between the 4th Street basin and the filled 5th Street basin. Constructed in 18870 and heavily rebuilt in 1889, the
bridge was a necessitated by construction of the 5th Street basin. It is discussed above in Section B. 4. of this chapter, and shown in Plate 3.12.

9. Carroll Street Bridge

The Carroll Street Bridge has previously been designated a New York city Landmark and found individually eligible for inclusion in the National Register. It is discussed above in Section B. 4. of this chapter, and shown in Plate 3.11.

10. Pumping Station

Constructed as an element of the 1905-11 flushing system, the Pumping Station is discussed in Section B. 3. of this chapter and is shown in Plate 3.25. Plate 2.14 shows the building nearing completion in 1911.