



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

July 27, 2012

Sarah Quinn
Department of City Planning
200 Ross Street, 4th Floor
Pittsburgh, PA 15219

Re: Schenley Farms Historic District (Boundary Increase), Pittsburgh City, Allegheny County, Key #156545

and

Brashear, John A., House and Factory, Pittsburgh City, Allegheny County, Key #009648

Dear Ms. Quinn:

The above named properties will be considered by the Pennsylvania Historic Preservation Board for nomination to the National Register on 10/2/2012. Copies of the registration forms are enclosed.

According to federal regulations, the Certified Local Government's official recommendation on the significance of the nominated properties will be presented to the Pennsylvania Historic Preservation Board at their meeting on 10/2/2012. This recommendation will be presented in writing, or if the Certified Local Government chooses, their staff may be present at the meeting to offer comments in person. Before any recommendation is made to the Historic Preservation Board, the Certified Local Government shall provide reasonable opportunity for public comment. The Certified Local Government may respond with "no comment." However, the Certified Local Government must comment on at least 75% of all National Register nominations within its jurisdiction.

If you wish to present written comments to the Historic Preservation Board, please address the following questions:

1. In your opinion is the property eligible for the National Register? Under what Criteria and Area(s) of Significance? What other properties in the municipality reflect similar themes or patterns?
2. In your opinion does the property retain integrity? What character-defining features reflect the potential significance of the property?
3. Is the property identified in a local list of historically significant places? When was it designated and for what reason?
4. Is the property identified in a municipal or regional plan and is the plan supportive of specified preservation goals?

Please be sure your written comments arrive prior to the meeting. If you would like your staff to attend the meeting and offer comments in person, please call our office in order to make arrangements.

Thank you for reviewing the enclosed National Register form.

Sincerely,

Carol Lee, Chief
National Register and Survey

Enclosure

Brashear, John A., House and Factory
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5. Classification

Ownership of Property
 (Check as many boxes as apply.)

Category of Property
 (Check only **one** box.)

Number of Resources within Property
 (Do not include previously listed resources in the count.)

- private
- public - Local
- public - State
- public - Federal

- building(s)
- district
- site
- structure
- object

| Contributing | Noncontributing | |
|--------------|-----------------|--------------|
| 3 | 0 | buildings |
| 0 | 0 | sites |
| 0 | 0 | structures |
| 0 | 0 | objects |
| 3 | 0 | Total |

Name of related multiple property listing
 (Enter "N/A" if property is not part of a multiple property listing)

Number of contributing resources previously listed in the National Register

N/A

0

6. Function or Use

Historic Functions
 (Enter categories from instructions.)

Current Functions
 (Enter categories from instructions.)

DOMESTIC: single dwelling

VACANT / NOT IN USE

INDUSTRY: manufacturing facility

DOMESTIC: secondary structure

7. Description

Architectural Classification
 (Enter categories from instructions.)

Materials
 (Enter categories from instructions.)

LATE VICTORIAN: Second Empire

foundation: STONE

walls: WOOD: weatherboard

BRICK

roof: ASPHALT

other: _____

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

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Summary Paragraph

The John A. Brashear House and Factory is a single property that consists of three contributing buildings: An 1886 three story, frame Second Empire style house, an 1886 two-story, brick, rectangular, flat-roofed, factory building of utilitarian design with Queen Anne style detailing, and a small side-gabled brick wash house (circa 1900) between the two. The property is located on a residential terrace overlooking Pittsburgh's north side and, as a whole, retains sufficient integrity to reflect its historical significance and association with John Brashear and the business he operated from the factory building.

Narrative Description

The Brashear House and Factory are found in an urban setting on the slopes of Pittsburgh's North Side neighborhood of Perry Hilltop. The 43 by 50 foot house is situated on an elevated terrace overlooking Perrysville Avenue, accessed by foot from the street level via a flight of winding stone steps. The view from the front of the house is toward the west over the upper Ohio Valley alluvial plain. The house commands a dignified presence, symmetrical in design and prominently sited. It is surrounded by a variety of slightly smaller frame houses and a few brick houses that line the winding avenues, steep hills, and ravines that connect Perry Hilltop to the older, level sections of Pittsburgh's North Side. The view from the front of the house is a pastiche of narrow buildings and gabled rooftops, projecting somewhat haphazardly from the uneven terrain, as is typical of many Pittsburgh neighborhoods. Also typical of Pittsburgh is the winding, cliff-side street known as Perrysville Avenue, once a main road leading out of the city to the north. The avenue is lined by segments of high stone retaining walls from the late nineteenth or early twentieth century and has a patchwork of tightly packed houses intermixed with steep, unbuildable slopes. Although the Brashear House is similar to other houses making up the Perry Hilltop tapestry, it is slightly larger than the others, somewhat boxier, and stands out among its neighbors as one of the neighborhood's most important houses.

The Brashear Factory is located directly behind the Brashear House at the top of the same hill. The factory faces a small access alley known as Honduras Street. Honduras Street meets another small street known as Divinity Street at a right angle in front of the factory building. The house and factory are only about forty feet apart, and the parcels they occupy adjoin, forming a large "ell shape" in which both legs of the ell touch the curving section of Perrysville Avenue. A row of unrelated brick houses occupies the space within the ell, along the curve of the street. The factory is tucked away behind trees where only glimpses of it can be seen from Perrysville Avenue. The brick walls of the factory are detailed in a way that resembles a small elementary school; in fact, by coincidence, there is now a twentieth century elementary school beyond the factory, and near it are several parcels containing houses that occupy the tract of land that briefly contained the former campus of the University of Pittsburgh. Although the factory was built a few years before the short-lived university campus came to occupy the hill top next to it, the school and the grid of neighboring houses are uses that were found for the larger piece of real estate after the university moved to Pittsburgh's Oakland Civic Center neighborhood around 1909.

To the rear of the house (between the house and factory) is a small brick wash house with a tin roof. This eleven by fourteen foot building stands approximately six feet away from the house, near the house's northeast corner. It is partially banked into the small hillside that separates the house from the factory. Together, the house, factory, and wash house represent three contributing buildings, contemporary with each other and historically related, on a piece of property that currently comprises two adjoining parcels. The house has been covered with vinyl siding and some interior features were changed in its conversion to apartments. The factory has some boarded-up windows and a small concrete block addition. The wash house is in an advanced state of deterioration. Some parts of the house were damaged in a 1992 fire, but almost all of the fire damage has been addressed in a remodeling campaign that occurred around 2005. Despite the fact that a number of architectural details were lost in the fire and subsequent remodeling campaign, these properties retain integrity and continue to convey the setting, feeling, and association of John A. Brashear and his important activities in Pittsburgh.

The Brashear House is a three-story, Second Empire style building, the third story being fully encased by a flat-sloped mansard roof accented by large dormers with paired windows. Scrolled brackets support the eaves on all sides which, in combination with the dormer detailing, make the roof the house's most prominent feature upon approach. An elevated

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open porch with Tuscan columns of lathe-turned wood on yellow brick piers extends across the front of the house, apparently added about 1910. It is a common porch style found in the Pittsburgh area with details associated with the Classical Revival and Colonial Revival. The second and third story windows are vinyl replacements with false muntins and mitered vinyl trim. Bay window projections indicate the important first floor interior spaces on both side elevations of the house. Original wood surface details have survived on the bay window projections on the side elevations although the lower details of one bay window are in poor condition and those of the other are covered in siding.

The symmetry of the facade gives way to an asymmetrical floor plan. The north side wall extends the full depth of the house, but the south side wall, after the depth of the front-facing living room, indents inward reducing the width of the original rear portion of the house. A large one-story addition consisting of a single room, known as the "gathering room," was added around 1910. It fills in the original open space to the rear of the living room. It has a large interior fireplace within an unusually tall chimney that rises about twenty feet over the roof of the addition.

The interior has been remodeled several times, both before and after the front portion of the house received heavy damage in a 1992 fire. Despite loss of trim at door and window openings, the layout of the main rooms remains essentially unchanged. Upon entry to the house, the rooms are arranged around a central stair hall that formerly contained a continuous three-story staircase. The staircase had turned walnut balusters, a molded handrail, and a lacy pattern of sawn wood ornament along the stringers, but these details were almost entirely destroyed in the fire which burned in a chimney effect directly through the center of the roof. The stair treads appear to be intact in the first two stories, but the handrail and stringer details have been replaced by a gypsum wallboard half-wall. The third story section of the center stair has been eliminated; a rear staircase was installed to access the top floor from within the second floor entrance to one of the apartments.

In the first story, a library to the north of the center stair and the parlor to the south have high ceilings with ample light from the high projecting window bays. To the rear, both the central hall and library access the original dining room now transformed into a kitchen by a later remodeling. A wood arch spans the east-west axis of the room bisecting the kitchen as it is now laid out. The arch is constructed of maple which had a natural finish until it was recently painted. In the center of the north wall of the kitchen is a large Queen Anne window with stained glass panes at its perimeter. The original south exterior wall of the kitchen was removed about 1900 to provide accesses to the later-built gathering room through a large glazed pocket door. The current kitchen (former dining room) also opens into a laundry/utility room to the east from which the basement stairs and a rear staircase may be accessed.

The gathering room, built between 1900 and 1910, is in the Arts and Crafts style. The particular use of the style resembles Prairie style interior examples by famous architects of the era such as Louis Sullivan or Frank Lloyd Wright. It has a coved ceiling with exposed wood beams. Although they originally had a deep-toned natural finish, they were painted in the most recent remodeling project. At the eastern end of the room is a large Roman brick fireplace. Ghosting in the hardwood flooring indicates where the fireplace was formerly flanked on either side by inglenooks composed of naturally finished wooden benches which also had wainscot surrounds. The western side of the room opens into the parlor through paired pocket doors.

On both the second and third floors, there is a large room to each side of the staircase, originally bedrooms. The bedroom above the first floor kitchen has a wooden arch echoing the arch in the kitchen although the upper story example is at a narrower opening. The two arches are elliptical in form, but the wider opening in the first story makes the detail there seem more like a segmental arch. The second story space over the center entrance contains a small room, perhaps originally a sewing room or small bedroom, but long since set up as a bathroom. The layout of bedrooms and baths on the upper floors remains largely intact, following the patterns established during Brashear's residency here, but now converted to slightly different functions as part of apartments. The rear wing, where two rooms on each floor originally were servants' bedrooms, was converted to two small apartments shortly after Brashear's death. Each of these apartments had a living area and a kitchen and bathroom until they were redesigned in the most recent remodeling project. On the exterior at the north side of the house, a wooden stair built of pressure treated lumber was added about 1980 accessing the portions of the house that were then rented out as apartments. At the northeast corner of the rear wing rooms, a small winding staircase rises from the kitchen area, originally the servant's stair.

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Significant portions of the second and third floor interior finishes were severely damaged in the 1992 fire. A number of stair details appeared at first glance to be intact after the fire, but the wood was uniformly charred to approximately a quarter inch below the original surface. These details were removed in the most recent remodeling project, and along with them, much of the interior trim at door and window openings was removed as well. The center portion of the third floor ceiling was lost when the fire had burned through the roof, but it has been replaced. A new system of wood trusses was inserted so that the exterior profile of the house matches the original roof slope.

The Brashear Factory is a long, rectangular red brick building with a flat roof. It is fourteen bays long and three bays wide. In one bay at the south end of the building is a concrete block addition. The concrete block is only in the rear (west) elevation and half of the south elevation, indicating there was once an indentation in the plan at this corner of the otherwise rectangular building. The building is red common brick laid in American bond with ornamental yellow brick segmental arches over the window and door openings. The structure of the bay system is visually accentuated, with brick pilasters between every two bays rising from a rock-faced stone water table to an ornamental brick cornice. The brick cornice forms a parapet with terra cotta coping. In almost every bay of the first story and in most of the second story, the windows are rectangular, double sash (1/1) units, set in pairs into arched openings. The windows all have stone sills. In seven bays of the second story, the openings have steel lintels hidden behind normal courses of common bond brick so that the window openings in these bays are rectangular. Along about half of the building's perimeter, the basement walls are exposed about four feet and contain basement window openings of about four feet by four feet, nearly all of which are now enclosed with glass block. Most of the building's second story windows are covered with plywood or corrugated fiberglass. The first floor windows are anodized aluminum replacement sash. One opening in the west elevation has a pair of original wooden Queen Anne doors. Each door leaf has a large raised panel at the center below which is a horizontal raised panel; at the top and bottom of each leaf is a pair of smaller raised panels.

The interior of the factory building consists of large open spaces designed for specialized manufacturing and laboratory equipment with a few small enclosures for rest rooms and offices. The structural system is riveted steel, with exposed riveted columns and purlins. A large area of the first story has had gypsum wall board added over wall surfaces in a recent, but incomplete, remodeling project. A derelict rest room on the upper floor retains wood wainscot walls up to a chair rail and other historic wood trim features, although it is otherwise empty and deteriorated.

Between the house and the factory building is a small brick wash house with a side-gable roof. The front consists of one entry door while each gable side has one original six-over-six window. Opposite the front door is a six-pane casement window at about shoulder height to compensate for the embankment. Most of its wooden trim and interior features have either been removed or are badly deteriorated. However, the overall form and style of the wash house remain intact. The intimate connection between the wash house and house can still be seen, as the wash house is within about four feet of the back wall of the gathering room, and within a few feet of the back kitchen door.

Although many details of the house have been altered, alterations that detract from the overall form of the house and factory are few. The vinyl siding (recently installed to replace aluminum siding added a couple of decades after Brashear's death), along with the vinyl replacement windows, are the most prominent changes to the exterior of house; however, most of the exterior's original wooden details were not removed during its installation. Alterations to the interior are generally all related to the conversion of the house to modern apartments. Modern kitchen and bathroom fixtures were installed throughout the house to serve the apartments, but in so doing, the overall layout, including locations of walls and doorways, was not changed. The most prominent elements of the interior that compromise the historic integrity of the house are the missing fireplace mantels, heavily damaged or missing windows, and the remodeling done to correct the fire damage on the second and third floors. However, because these elements do not involve many alterations to structural elements of the house, such as the removal of walls, the house could be restored. Modern alterations to the factory building are also minimal and only involve new windows on the first floor and a small two story concrete block addition on the southwest corner.

With respect to the Criteria A and B Significance of the property in the Area of Industry, the Second Empire style house retains integrity of the essential features of the design as it was built to serve as Brashear's relatively modest residence.

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The Colonial Revival style porch, built during Brashear's lifetime, is not only a typical alteration to large houses of this style and period in Pittsburgh, but is composed in a way that reinforces the symmetry and scale of the house. As noted above, the design of the gathering room, though a stylistically mismatched change to the house's original design, is noteworthy in its own right. An unusually progressive design for the Pittsburgh area in Brashear's lifetime, its construction is an indication of Brashear's expanding social role in the community in the last two decades of his life. The essential elements of the gathering room and the features where the gathering room addition meets the house remain remarkably intact in spite of removal of details such as the inglenook benches, painting over of the natural finished wood details, and remodeling in the adjoining rooms, notably the kitchen.

The factory building retains the style, feel, and character it had during the period of significance, when John A. Brashear was manufacturing optical instruments here. It is an example of a small-scale industrial building surviving in a Pittsburgh residential neighborhood with the essential features of the industrial spaces built for turn-of-the-century light industry.

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A Owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance

(Enter categories from instructions.)

Industry

Period of Significance

1886-1954

Significant Dates

1886

Significant Person

(Complete only if Criterion B is marked above.)

Brashear, John A.

Cultural Affiliation

N/A

Architect/Builder

Unknown

Period of Significance (justification)

The Period of Significance begins with the year that the house and factory were built and continues to 1954, the approximate date in which the factory moved to a new location. This includes the entire time that John A. Brashear lived and worked at the property (1886—1920) and the period after Brashear's death when the factory made instruments used during World War II, notably Norden Bomb-Sights, which were of strategic importance during the war.

Criteria Considerations (explanation, if necessary)

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Brashear House in Pittsburgh's Perry Hilltop neighborhood and the adjoining Brashear Factory building are significant under National Register Criteria A and B in the Area of Industry for their association with John Alfred Brashear, a noted scientist who manufactured lenses for telescopes and developed related scientific instruments on the property. They are the only surviving buildings in Pittsburgh directly associated with the life and work of John Alfred Brashear. World-renowned as a scientist and well-known as a manufacturer of optical and astronomical equipment, Brashear lived at 1954 Perrysville Avenue from 1886 until his death in 1920. During this same time period he worked with a small crew out of the factory building directly behind the house manufacturing optical instruments. Brashear's relatives occupied the house for a few years after his death, and the factory continued to operate, making the products Brashear had developed, until approximately 1954. During World War II, strategically important lenses and "sights" for bombs were manufactured here, notably an instrument for guiding bombs known as the "Norden Bomb-Sight." In his lifetime, Brashear was considered the most important scientist to make his home in Pittsburgh. His scientific experiments and the scientific equipment he manufactured at this site led to important developments in astronomy, spectrography, and aeronautics. The house and the factory reflect the role that Brashear and his company played in the Pittsburgh area industrial establishment.

Narrative Statement of Significance (Provide at least one paragraph for each area of significance.)

Criterion B Significance in the Area of Industry, Association with John A. Brashear

The property derives its Criterion B Significance in the Area of Industry from its association with John A. Brashear, an important manufacturer of scientific instruments who lived in the Pittsburgh area in the nineteenth century. Brashear was part of the Western Pennsylvania industrial complex from his youth. Reared in Brownsville, a boatbuilding town that once rivaled Pittsburgh and an early manufacturing center for steam engines, he learned about the millwright trade from his maternal grandfather at an early age. The family relocated to Pittsburgh while he was still a minor. Although his father's family had been prominent as tavern operators in Brownsville, his closest relatives were tradesmen, and a formal education in the subjects he loved such as science and astronomy may have been out of their reach. Nevertheless, Brashear spent some time attending a local business college, taught himself the principles of science and how to work with glass, and found a niche for himself by manufacturing telescope lenses. Beginning with a crude lens he ground at home, he rose to such prominence in the region that by the end of his career, he was not only a well-known specialized manufacturer but also an important educator in Western Pennsylvania. The special status he enjoyed among some of the region's wealthiest industrialists led them to finance the construction of his home and the factory behind it. The house and factory were built on land contributed by coal and railroad baron, William Thaw, who had already been supporting the work of Brashear's mentor, Samuel Pierpont Langley, the director of the nearby Allegheny Observatory.

As Brashear's residence and workplace and the only extant buildings directly associated with his day-to-day life in Pittsburgh, the property continues to represent the Brashear story. Despite changes to many of its architectural details, the house reflects his stature in the community and his activities. It is consistent with fairly large frame houses built by moderately successful business people in the area in the last quarter of the nineteenth century, often in the Second Empire style, and it was modified in the last decade of Brashear's life specifically to accommodate more people at social gatherings and meetings. The addition, built around 1910, is a low form juxtaposed with the tall mass of the house and detailed in a contrasting style, a physical representation of Brashear's expanding social role in the industrial and educational community of the time. Despite the stylistic differences, the house and addition are closely interconnected, reflecting the room's intent, to make larger gatherings possible alongside Brashear's existing parlor and dining room.

Brashear's Contributions to Science, Industry, and to the Local Community

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Brashear's activities as an instrument maker led to many scientific discoveries. His work in producing diffraction gratings alone was monumental to science and industry. Diffraction gratings disperse light in a spectroscopy, producing a spectrum of colors indicating the presence of specific chemical elements. This device was tremendously useful in diverse applications. Scientists used the spectroscopy to determine the chemical makeup of stars and to document the radial velocity of galaxies, while industries used spectroscopes to determine the gases present in blast furnaces. In addition, Brashear's invention of "photographic doublets" greatly increased the resolution of astronomical photography. This invention led directly to the discovery of over 300 new bodies (asteroids, moons, and similar formations) within our solar system, 13 comets, and a greatly expanded catalog of celestial images. The construction of the first spectroheliograph by Brashear facilitated Dr. George E. Hale's pioneering work in the field of solar astronomy. In 1886, Brashear built the rotating mirror that Dr. A. A. Michelson employed in his experiments, conducted at his own facilities, calculating the velocity of light. These developments paved the way for Albert Einstein's Theory of Relativity. Brashear's instruments and telescopes were commissioned for observatories throughout the United States as well as in Africa, Canada, Ireland, Scotland, England, Italy, France, and Chile. From the 1880s until the 1930s, the process Brashear invented for silvering mirrors (which, in fact, is called "the Brashear Silvering Process") was the industry standard in practically all mirror production.¹

While Brashear was not the only manufacturer of scientific devices in his day, the contribution of his equipment to these significant discoveries created a reputation for him as being one of the best manufacturers of precision optical equipment. This is evident in the fact that he had clients all over the world and the way he was deeply respected by the scientific community as a consequence. Competition was most likely not an issue for Brashear, since he freely published information on a regular basis regarding technical improvements he devised to equipment with little concern for patenting. Instead, he maintained a reputation among his peers as being not only a master craftsman, but also as a respected individual with a sincere interest in the expansion of scientific frontiers.

Brashear's manufacturing and scientific activities as the "master instrument maker of the world," led to a new role for him as an educator and humanitarian.² He served as the director of the Allegheny Observatory from 1898 to 1900 and, because of his efforts, funding was secured for the construction of a new observatory, now the centerpiece of Pittsburgh's Riverview Park. In 1889, the Western University of Pennsylvania (now the University of Pittsburgh) relocated from its original downtown Pittsburgh site to the hilltop behind Brashear's property. In 1896, he became one of the university's trustees. As a trustee, he served side-by-side with Andrew Carnegie, the region's leading industrialist, George Westinghouse, an inventor and manufacturer of specialized equipment who (like Brashear) had also started his career as a millwright, and Andrew Mellon, the most important banker involved in financing industrial developments in the region at the time. By 1900, Brashear had been appointed as the university's acting chancellor, a position he held for four years.³ While he served as acting chancellor, the University broke ground on its Dental School and School of Pharmacology. In addition, the number of female students at the school steadily increased during his tenure, and on numerous occasions Brashear appealed directly to Henry Clay Frick and other members of Pittsburgh's business elite to provide financial assistance for those students without adequate resources. A few years after his term as acting chancellor ended, the university relocated to Pittsburgh's Oakland neighborhood where it began building its current campus. None of the buildings associated directly with the campus during the brief time (1889-1909) that it was located in the hilltop area are known to have survived. At both the Allegheny Observatory and the Western University of Pennsylvania, Brashear refused permanent appointments to head each institution.

In the same years that he was the acting chancellor of the Western University of Pennsylvania, Brashear was appointed by Andrew Carnegie to lead a group of three trustees in the establishment of a new trade school known as the Carnegie Technical Schools (later renamed Carnegie Institute of Technology and now known as Carnegie-Mellon University).⁴ He helped to shape the plans for this new institution into a major facility for educating local people who, like himself, had been born into the working class. The original intent of the Carnegie Technical Schools was to educate the most promising members of local working families so they could become highly specialized tradesmen and engineers. From this vision, within twelve years of its establishment, Carnegie's new school developed into an institution of higher learning that offered four-year degrees. In a short period of time, both universities (Carnegie Institute of Technology and

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the University of Pittsburgh) became critical in educating the engineers and other specialists who were needed in the growth and advancement of Pittsburgh's numerous industrial corporations. Thus Brashear's role as an educator, and as trustee of both universities, was really part of his role in shaping the industrial developments of Western Pennsylvania.

Despite the fact that he had had almost no formal education, in 1915, Brashear's contributions in the fields of science and education led Governor Brumbaugh to call him the state's most distinguished citizen. In his lifetime, he received honorary degrees from a number of institutions including Princeton University. He held memberships in esteemed astronomical and scientific societies throughout Europe and North America, including the Royal Astronomical Society of Canada and the National Geographic Society. However, to residents of Allegheny City and Pittsburgh, John Brashear was known simply as "Uncle John,"⁵ illustrating to what extent Brashear was an approachable and well loved local resident. Reflecting on his contributions as a scientist and humanitarian, Brashear biographer Harriet Gaul wrote, "What John Brashear did in science may have been superseded since by newer methods with later innovations; he remains the pioneer. But what he did to popularize astronomy can never be equaled. He brought the knowledge of the skies down to the people who walked the earth with him."⁶

A comparison between Brashear and Westinghouse may be apt, as they lived at approximately the same time and served together as trustees of the Western University of Pennsylvania. Westinghouse, who was six years younger than Brashear, also grew up working as a millwright, and like Brashear, he built his business around innovations. However, the extensive empire that grew from Westinghouse's enterprises, as evidenced at one time by sprawling industrial plants, testifies to his focus on business in the years that Brashear — despite his own humble beginnings — was becoming one of the leading and most respected educators and intellectuals in the region.

Criterion A Significance in the Area of Industry, Association with Industrial Production

Although John Brashear was known internationally as a scientist and was highly esteemed in the local area as a leader and an educator, his activities in Pittsburgh were solidly part of the industrial establishment. The property does not reflect specific scientific activities, beyond the kind of space needed for grinding and maneuvering large lenses, or specific educational activities. However, it does reflect Brashear's interaction with the business community and his day-to-day business of manufacturing lenses. Brashear's production facilities were but a fragment of the larger industrial complex for which Pittsburgh was famous. As a specialized manufacturer, he ran one of the region's smallest manufacturing facilities. However, the scientific advances that he made while working in his factory helped to generate an interest in science among local industrialists. In his lifetime, the new profession of engineering grew out of the older trade of working as a millwright, the subject of his training as a young man. He played a leading role in this transformation in the same years that he worked from this factory. The Brashear property provides a visual representation of the workshop of a scientist and educator whose day-to-day work was small-scale manufacturing; it includes the spaces where he entertained guests and held business-related meetings in addition to his physical place of work.

As a small manufacturing plant, the Brashear factory reflects the specific role it played in the Pittsburgh area industrial network. While typical in many ways of local factory construction, it is of modest scale and unusual in its hilltop siting in an otherwise residential neighborhood. Industrialists recognized the value of Brashear's work beginning with capitalist William Thaw who gave him the land for the house and factory and helped to underwrite the cost of construction of the buildings. The factory was spacious enough to accommodate the equipment used to grind very large lenses, but as a business, it employed only a handful of workers and produced only a few items at a time. Larger than a modest workshop, and smaller than most factory buildings, the building conveys a sense that the local benefactors who made its construction possible wanted Brashear to have a facility that provided plenty of flexible space and accommodated the specific kind of work he carried out there. In this environment, Brashear was able to experiment and introduce innovations that led to important developments in his lifetime.

Although now in a state of physical decay, the factory building still reflects the scale and manner of his operations. At least one photograph survives of Brashear standing at a large grinding machine at the center of the factory's open space, driven by an overhead belt and next to the work bench and tools that he used. A few of the items in the background of the

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image remain in place. The photograph was taken in the same area where a trap door is found in the floor. The windows of the building's west wall are in the background in the image, and the intense light of the morning sun streams through the east wall's windows, lighting the area where Brashear is standing and casting shadows on the part of the equipment that lay just beyond his reach. The factory building still conveys the openness, scale, and natural light depicted in the historic image.

The factory became indirectly linked to Brashear's role in education after the Western University of Pennsylvania moved its campus to the neighboring site, in 1889, when the house and factory were just three years old. Although the factory building has a vague resemblance to a school building, the relationship is apparently coincidental since the factory predated the construction of the campus by three years. As tempting as it may be to think of his house as fitting for a university president's residence, the relationship is also one of coincidence. The house's location, oriented to a residential street in the shadows of a factory building and downhill from the area where the campus was, makes the property very different from most examples of academic architecture and campus planning. While they do not retain any features that specifically relate to an educational function, the house and factory are reflective of their role as the home and laboratory of an industrial innovator who was also an educator.

Brashear's factory building does bear resemblance to the buildings of the second university where he was involved as a trustee, the Carnegie Technical Schools on the far side of the Oakland neighborhood in Pittsburgh's Schenley Park. The original buildings of the campus Carnegie established with Brashear's assistance were notably more factory-like in their appearance and function than the facilities of other academic institutions of the time. The open space and scale of Brashear's factory building is very similar to some of the oldest laboratory spaces at the Carnegie Technical Schools where construction began in 1904 (including buildings and laboratories that are still in use as part of Carnegie-Mellon University).

With his roots in Brownsville, his broad experience as an educator, and his connections among prominent Pittsburghers, Brashear had most likely known many of the region's industrialists from an early date as well as the various trends in glass manufacturing, navigation, industrial instrumentation, and science that were represented in the hundreds of manufacturing plants scattered across the region. The decade in which Brashear was building his house and factory, was an important time of transition for the region's glass industry. Beginning around 1880, the shift from coal to natural gas as the preferred fuel for making glass was an impetus for major developments across Western Pennsylvania. Initially, the glass industry of the Pittsburgh area had pioneered the use of coal as the fuel to melt the glass. Beginning around 1810, this had led to a concentration of glass plants in and around Pittsburgh's South Side, a major downriver holding area for coal shipped from upriver mines by barge. By the 1880s, when local glass manufacturers decided to try natural gas, a new natural gas well was being drilled almost every week somewhere in the region. Since the wells in any one area could only support a few glass factories, the old companies of Pittsburgh's South Side were moving one by one to the scattered new well locations, often urbanizing pockets of what had been productive farmland in the 1870s, up to 80 miles from the city. Just as the industrial facilities of the region were expanding in steel, iron, coal, coke, and related industries, new glass factories were under construction in dozens of communities across the region in the 1880s and 1890s.⁷ The Brashear factory was smaller than all of these operations, but the building shares some characteristics with most of the others such as the use of brick bearing walls reinforced by brick pilasters that have both a structural and decorative effect.

The Brashear Factory may be the only facility in the country designed specifically to serve as an optical equipment and lens manufacturing plant. The factory building's length made the basement an ideal testing area for the particular kind of long-focal-length telescopes Brashear was manufacturing. The factory also had specific tools for the production of optical equipment, including machinery that utilized natural gas. Although a major revolutionary force in many Pittsburgh area industries in the 1880s, natural gas was usually used to melt glass and other substances, while at Brashear's plant it was used to drive machinery. Brashear was one of the first to use natural gas as a fuel for such a mechanical system. The building was also designed with an overhead belt shaft and floor openings as well as upper story doors to facilitate moving the lenses from one location to another. A work bench is still in place between the main hatch and the west wall.

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Historic photographs show Brashear posing next to a large grinding machine near the windows in 1915. He was in the process of rough-grinding a lens for an observatory in Victoria, Canada at the time.⁸

Brashear most likely knew some of the larger manufacturers in the region working in optical glass. For instance, George A. Macbeth had developed a substantial glass factory around the idea of "optical glass" in Pittsburgh by the 1880s. Macbeth started out as a door-to-door medicine salesman, and from there got into the business of making bottles. By 1890, he had re-branded his company around optical glass which included shades for lighting fixtures, chimneys for oil lamps, glass used in industrial gages, and pressed glass lenses. Macbeth's interest included the manufacturing possibilities of Fresnel lenses, the complex lens systems used in lighthouses. Each lens was made of dozens if not hundreds of glass prisms set on precise angles into a brass framework. While almost all the lenses for lighthouse lanterns were made in France in this era, where the glass for each piece was ground by hand, George A. Macbeth claimed to be the only lighthouse lens manufacturer in the world using molds to make the prisms from pressed glass. Macbeth perfected his concept a few years after moving his Pittsburgh plant to the new town of Charleroi in the natural gas fields not far from Brashear's home town of Brownsville. By 1914, able to work at a scale at his Charleroi plant that dwarfed Brashear's Pittsburgh operation, Macbeth had been commissioned to make lenses for the 35 lighthouses that lined the Panama Canal, most likely the largest lighthouse lens manufacturing project of that generation.⁹ Lenses of other kinds were made at Macbeth's plant and also at the Creighton plant of the Pittsburgh Plate Glass Company, as well as by one or two other glass manufacturing concerns in the region.

Brashear's smaller competitors were concentrated in industrial areas around the country. There was often a connection between the industrial geography of the surrounding area and these small manufacturing facilities that specialized in making finer instruments and in conducting innovative experiments. For instance, several of the instrument makers and inventors of Brashear's generation were located in the older seaport towns of the northeastern states where there was a market for navigation. An example was John Bliss, a watchmaker who made and sold navigation instruments from a storefront location in Norwich, Connecticut. Bliss's telescopes and barometers, however, were made for him by workmen in France. A number of Brashear's competitors in the lens-grinding business, many of whom were immigrants from Germany, settled in Rochester, New York, where their enterprises grew with the development of the American camera industry. Several small companies in New York City and Boston were also making telescopes and similar instruments at the time. One of Brashear's main collaborators, the firm of Warner and Swasey, a company that made housings for Brashear's lenses, was located in Cleveland, Ohio. The concentration of these businesses in such industrialized urban cities was attributable, at least in part, to the need for instruments used in heavy industry. However, among the manufacturers, Brashear may have been the only one recognized across the country with such esteem as an individual leader and the senior scientist of his generation in the field.

In the earlier years of the business, Brashear's manufacturing was based on specific orders he received from scientists he had either met or who had heard about him and his work. As more and more scientists realized the capabilities of Brashear's facility and the quality of his work, orders increased. As the business expanded, particularly with the new manufacturing facility on the North Side, many of Brashear's products were manufactured on a regular basis because of their common applications. These products ranged from basic lenses for various uses to smaller telescopes intended for amateur or novice astronomers. However, most of what the company manufactured still consisted of preparing lenses and other instruments for individual orders to produce products with specific functions, such as the individual telescopes the company later manufactured for universities and observatories around the world.

Though the work performed at the Brashear Company was extremely advanced for the time, and, therefore, may have been unique, there were several other individuals and companies doing similar work in the United States and Europe. Warner & Swasey, in Cleveland, Ohio, was formed around 1880 and worked directly with Brashear's company to produce telescope housings for Brashear lenses, though Warner & Swasey's business was primarily in producing machine tools and was therefore not solely optical or astronomy related. In Washington, D.C., George N. Sigmuller was a well known maker of large telescope housings and also worked with Brashear. The Brashear Company's chief competitor, though, was the Alvan Clark and Sons Corp. in Cambridge, Massachusetts, which also produced optical and small

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instrument lenses. These four manufacturers were the premier developers and producers of optical and astronomical equipment in the world in the late 19th and early 20th centuries, but the Brashear Company maintained a reputation of being the best. As a scientist working specifically in optics, Brashear's peers included Alvan Clark of the Cambridge company, Thomas Cooke in England, and Karl Zeiss in Germany.¹⁰

The Brashear factory is tiny compared to the known facilities of some of his most distinguished contemporaries and competitors. Warner & Swasey's factory in Cleveland, where housings were made for Brashear's lenses, is still standing. It has a front section that is five stories tall, over twenty bays long, and four bays deep. A Colonial Revival style edifice, with prominent quoins and other embellishments and large, round-arched, Classical Revival style windows set in the rusticated brick walls of the first story, it is a far more imposing building than the two stories brick construction and Queen Anne style embellishments of Brashear's factory building. Its size, however, is a reflection of its larger business, manufacturing machine tools, rather than specialized telescope manufacturing. In fact, the Warner & Swasey plant is more in keeping with larger facilities built by much more productive Pittsburgh operations such as George Westinghouse's two plants, Union Switch and Signal in Swissvale and the Westinghouse Air Brake Company in Turtle Creek.

The plants where lenses and telescopes were manufactured by Alvan Clark and Sons at Cambridge and George N. Sagmuller in Washington, DC, may no longer be in existence, and very little appears to be known about them. Like Brashear's factory, however, it is possible that they were modest facilities from which a disproportionately large impact was made.

Developmental history/additional historic context information (if appropriate)

Early Life, Education, and Work Experience of John A. Brashear

John A. Brashear was born in Brownsville, Pennsylvania in 1840. His father, Brown Brashear, was a saddler, and his mother, Julia Smith, was a school teacher and daughter of Nathaniel Smith. The Brashear family also operated a noted tavern from a stone building where Brashear was born, a contributing resource in the Brownsville Northside Historic District [NR 1993]. The tavern was associated with the National Road in its heyday. Brashear's maternal grandfather was a talented and intelligent man, with interests in music and oration. Most importantly, though, was Smith's interest in mechanics and astronomy. When Brashear was nine, his grandfather took him to look through the telescope of a friend.¹¹ Though the telescope was of home-made quality, Brashear personally credited this incident with spurring on his initial, and subsequently lifelong, fascination with astronomy.

During his youth, Brashear's formal education was extremely meager. Having spent only a few winters in a public school in Brownsville, he attended Duff's Mercantile College in Pittsburgh when he was fifteen. This was also a short-lived venture, and despite his mother's wishes for him to become a minister, thereafter Brashear apprenticed himself as a pattern maker for an engine works where he acquired mechanical skills that would serve him the rest of his life.¹² Among the most important river ports in the Mississippi watershed in the early days of steam navigation, Brownsville and Pittsburgh were both bustling centers of boatbuilding, iron production, and engine manufacturing during Brashear's youth. During his late teens, Brashear also spent time in Louisville, Kentucky, but returned to Pittsburgh when the Civil War broke out and became a machinist at the Zug & Painter Mill on Pittsburgh's South Side, then known as Birmingham.¹³ Back in Pittsburgh, Brashear met his future wife Phoebe Stewart, whom he married in 1862. The following years were fairly uneventful for the two. Brashear worked at Zug & Painter until 1867, and afterwards at McKnight, Duncan & Company, also in Birmingham.¹⁴

Amateur Attempts at Lens Making and Relationship with Langley.

In 1870, Brashear and his wife bought a lot on the South Side and built a simple wood frame two story house. It was here that he began to actively pursue his interest in astronomy, applying his background in mechanics.¹⁵ While still

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maintaining his full time job in the mill, he built a modest workshop behind the house, where he installed a small boiler-powered engine to turn a lathe. In 1872, with no formal education in optics, he began making a lens. In his autobiography, Brashear describes the initial attempt: "When we began work I was absolutely ignorant of the various processes used in lens-making, but I managed to cut the square disks to circular form, and roughly to compute the curves, although I knew nothing about a study of the index of refraction or dispersion of the glass. Many, many trials did we have in those years of grinding and polishing."¹⁶

This first lens, unfortunately, broke. However, a second attempt proved successful, and though the lens was less than perfect, Brashear brought his work, assembled into a telescope, to Samuel Pierpont Langley, director of the Allegheny Observatory and a well-established scientist and astronomer. Langley was impressed with Brashear's successful venture into making instruments, and the two remained good friends until Langley's death. Brashear's relationship with Langley benefited both of them. Initially, it was Langley's scientific advice and suggestions that led to Brashear further developing his lens-making skills. Langley suggested Brashear's next lens should be a silver coated reflecting lens, and after Brashear successfully completed the lens, Langley eventually used the lens for his own research. In addition, Brashear assisted Langley by providing him with finely polished rock-salt prisms which Langley had previously been ordering from Paris. Transit times and the delicacy of the salt greatly hindered Langley's work in using the salt prisms in a spectrolometer, an instrument capable of detecting heat radiation to one-hundred-thousandths of a degree. Using galvanic needles to make precise measurements, spectrolometers were used at the time to study the energy levels apparent in the rays of the sun and stars. Langley used the bolometer to study the affects of the sun's radiation on earth's organisms.¹⁷

Brashear's assistance in Langley's work in aeronautics was also notable. Langley pioneered much of what became standard techniques for achieving flight, but it was John Brashear who, moving beyond his lens making interests, built the prototype flying models to Langley's plans. Langley's first experiments involved "whirling tables" with spinning propellers in an effort to determine how propellers could move bodies through air. Built by Brashear, Langley designed a 100 centimeter long model airplane with a spring-wound propeller, similar to later children's model gliders. After Langley moved to the Smithsonian Institution in Washington, D.C., this model was expanded upon and eventually, powered by a small steam engine, a thirteen foot version flew over half a mile from a boat on the Potomac River and landed softly. However, Langley's future developments in the field proved unsuccessful, and in 1903, after a plane Langley designed to carry a human crashed into the Potomac, public chastising led Langley to abandon future experiments. Nevertheless, the Wright brothers admitted freely that it was Langley's work that influenced their success, saying "He recommended the right books for us to read. It was a helpful hand in the right direction."¹⁸ To his defense, in 1914, a government trial successfully flew the same plane that crashed into the Potomac. The pilot, Glenn Curtiss, declared Langley could have flown it himself had he used a stronger engine.¹⁹ While Brashear played a less active role in Langley's later aeronautic endeavors after Langley worked out of the Smithsonian, Brashear's initial help in both scientific suggestions and craftsmanship greatly contributed to Langley's work.

William Thaw as Benefactor and Expansion of Business with New Perry Hilltop Facility

Brashear's help to Langley in the fields of science and aeronautics was repaid when Langley introduced Brashear to William Thaw Sr.,²⁰ a well established Pittsburgh industrialist and philanthropist.²¹ Thaw would become Brashear's primary benefactor, allowing him to stop working as a millwright and to devote his energies solely to instrument making. In 1886, Thaw built the Perrysville Avenue instrument works for Brashear and provided him with the land on which he built the adjoining 1954 Perrysville Avenue residence.²² While Brashear originally planned on renting a house in the vicinity of the new factory, Thaw and perhaps other local benefactors who wished to support Brashear paid for the construction of the fairly substantial house, which certainly would have been out of Brashear's financial means.

Brashear was delighted by the opportunities the new factory facility gave him. He described his new factory in his autobiography, as follows:

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"I had a machine shop twenty by forty-two feet, with beautiful light surroundings. I put in a splendid forty-four-inch swing lathe made expressly for me, a fifteen by seventeen shaper, and a fine ten-horse-power engine. My motive energy was natural gas, of whose virtues I have previously spoken. Over the machine shop were the pattern shop and stock patterns — a nice band saw and lathe. In the boiler and engine room I placed my rough grinders to save dirt from the fine work. In the optical shop there were two heavy benches for machines, a bench and sink for silvering, one for making polishers, and nicely arranged cupboards and shelves. I had my drawing table in the office, where I kept my finished work.

"The testing cellar, according to Professor Langley, was perhaps the most complete in this country. There was an eighteen-inch air space all around it and a cement floor. In the dividing-engine room were six windows; and the earth outside the stone wall was low enough for splendid light, the windows being double. It could be heated automatically, and kept at a regular temperature. A door was provided in the partition so that, in case I had any long glasses to test, this door could be thrown open. Two heavy posts were cemented down deep into the floor, and did not touch the building at any place. They ran up into the optical room, where the glass was placed on its support, and then slid down into the cellar by rope-pulleys, counterpoise — all attached to the uprights. I had never dreamed of having anything so nice."²³

While his lens making was originally only a hobby, Brashear's career in optics and instrument making began after 1880, when Brashear's hobby began to grow into a small side business. He made the lenses as they were ordered by scientists across the country. Influential in helping him take this step was his adopted daughter's husband, James McDowell. After McDowell showed great interest in Brashear's work and expressed an interest in being involved, he and Brashear pooled their money to make lens making their main business. "It was surely an epoch in our life-history," Brashear wrote, "and I am a little afraid that failure would have been our lot had not the Good Samaritan William Thaw found us just at this turning-point in our lives."²⁴ McDowell was not only a financial partner in the endeavor, but also contributed greatly to the scientific and technical aspects of the business, and he and Brashear remained good friends and business partners until the end of Brashear's life. In 1885, before the new factory was built, Brashear had five assistants.²⁵ The new manufacturing facility and the expanding business that came with it required increased staff, and by 1899 the factory employed 23 males. By 1903, 27 males and nine females were employed by the business.²⁶ Because of the advanced nature of the work, there was no educational program that would have taught the techniques used in the factory. Consequently, most of these workers were trained on site and became skilled in the mechanics and manufacturing of optical lenses. Perhaps ten or fifteen members of the workforce were regularly employed cutting and preparing glass for lenses. These basic lenses would then have been refined by the more highly skilled individuals such as Brashear and McDowell. Other highly skilled scientists on staff included Dr. Charles S. Hastings, who joined the Brashear Company in 1887. Hastings, a world-renowned scientist, calculated the lens curves of any objectives for which the company received orders. Brashear wrote of Hastings, "To his masterly knowledge of mathematical optics, with the added skill of McDowell and his boys in the shop, is due the successful making of perhaps half a hundred of the larger telescope objectives."²⁷

After Brashear died, the company was led by Brashear's son-in-law James McDowell. McDowell remained in charge until his death in 1926 when, as per an agreement that had been made earlier between McDowell and James W. Fecker, Fecker bought the company. Then 35 years old, Fecker came from Cleveland, Ohio, and had a background in lens making, having worked at Warner and Swasey, the Cleveland telescope and machine tool company that had been in close collaboration with the Brashear operations for many years.²⁸ Fecker successfully operated the company out of the same facility on the North Side until his death in 1945, and the company finally left the Perry Hilltop facility around 1954. Like most Pittsburgh manufacturing facilities, the factory provided materials needed during World War II. As part of the war effort, mechanized lenses for guiding bombs were made here using the latest and most sophisticated technology. Known as "Norden Bomb-Sites," they were used to guide bombs toward the designated targets as they were being dropped from military aircraft. Having moved from the site in the 1950s, John Brashear's original company is still in existence in the form of the present Pittsburgh company Brashear LP. Brashear LP still manufactures telescopic and other optical equipment.²⁹ The company also goes by the name L-3 Brashear.

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After Brashear's death in 1920, the house passed briefly to his daughter (Phoebe Brashear died in 1910) and then in 1923 to two sisters, Jane and Ethel Tait who lived there until their deaths in the early 1970s. After Jane Tait died in 1972, the house passed to a third sister, Edith Tait Deedrick, who resided there until she died in 1983.³⁰ It was Edith Deedrick who added metal siding to the house (more recently replaced by vinyl siding). Following her death, the house was sold to James DeWitt in 1983 and converted to apartments. While under renovation in 1992, a portion of the house was badly damaged by fire. The fire destroyed most of the center staircase and left a large hole in the roof. The original details of this part of the house were altered in the process of repairing the damage, and in the same recent project, decorative trim details were removed from almost every surrounding room. After the fire, the property was acquired by a community development corporation known as PHASE (Perry Hilltop Association for Successful Enterprise). PHASE had hoped to rebuild the house, but was forced to sell it to a private party shortly after 2000. Having been rehabilitated for use as apartments in a project that is almost finished, the ownership has transferred to United Midwest Savings Bank, headquartered in De Graff, Ohio. The house is currently on the market again for sale. The factory building is also for sale. Vacant for many years, it is owned separately by a different party.

Significance of the Brashear House as Associated with Brashear's Activities

As the primary residence of John Brashear during the latter half of his life, 1954 Perrysville Avenue is reflective of his growing social stature determined by his success as a scientist and an educator. For most of the time the Brashear family lived in the house, residents of the house consisted of John and his wife Phoebe, as well as their adopted daughter Effie and her husband James McDowell (who were married in 1880), who was also Brashear's close associate in the instrument business. In addition to being the Brashear family's residence, the house served a strong social function. Since building his first telescope while still living on the Southside of Pittsburgh, Brashear was regularly visited by businessmen, scientists, and friends interested in his work. The house, though not as large as the homes of most of the industrialists and capitalists who visited there, was fairly large and well appointed, and it served accordingly to represent Brashear and to entertain his frequent guests. Brashear's social responsibility increased after 1900 when he became the acting Chancellor of the Western University of Pennsylvania, and later in working with the Carnegie Institute of Technology. This made necessary a larger gathering space at the house — the large ball room, or "gathering room," which was stylishly appointed to reflect the popular Arts and Crafts style of the time.

The "gathering room," is an architectural design of its own character and significance. Though built later than the rest of the house and in a very different style, its interior was detailed with elegant and distinguished examples of the Arts and Crafts style. Some of these have been recently removed, but the room as a whole retains a strong feeling of the style. Seen primarily from the interior (apart from its immense chimney, the exterior construction has very little impact on the appearance of the front of the house from the street below), the room was probably added during the first decade of the twentieth century. As part of its original design, the room has special features to facilitate large groups of people, such as wide openings connecting it to the adjoining older entertainment rooms of the house. An unusually wide opening connects the gathering room to the dining room and a smaller one connects it to the parlor. The dining room opening incorporates a butler's pantry, a half-wall with a Craftsman style column, and a sweeping arch. These features allowed guests to see into the adjoining rooms and circulate freely through them, and the design thus appears to show a concern for entertainment and a blend of formal and informal effects. At the end of the gathering room's long axis, perpendicular to the axis leading through the arch, a striking fireplace design serves as the main interior focal point. It is also expressed from the exterior (although now largely blocked by trees): the chimney rises directly from the fireplace to approximately 20 feet above the roof of the wide and low form of the wood frame addition, like a stylized interpretation of an industry chimney detailed to draw attention from afar to the room and its function. The function may have related largely to his new responsibilities as the leader of the university whose campus was then near the property, but it also reflects his increased stature in the industrial and scientific community of the Pittsburgh area.

The "Gathering Room" is an unusually high-style example of the Arts and Crafts style, perhaps better described as Prairie style, since it closely resembles contemporary works by nationally known architects such as Frank Lloyd Wright or Louis

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Sullivan. Although the use of decorative wood beams to divide the ceiling is not an uncommon feature for a house of this decade in the Pittsburgh area, it is found here in combination with an unusually modern fireplace that was originally flanked by built-in benches. As an ensemble, these details bear remarkable resemblance to the way fireplace walls were treated by Frank Lloyd Wright in several of his early twentieth century residences. The Roman brick fireplace, with its low, horizontal opening and mantel shelf flanked by modern brick pilasters that rise to form an "H"-shaped motif, originally flanked by the built-in wood seating and wainscot, is definitely distinctive. Even without the recently removed inglenook benches that completed the design, the brick pattern is very unusual for a 1910s house in the Pittsburgh area and is clearly reminiscent of the progressive work of Chicago and Midwestern architects of the era.

The Brashear House is one of the more prominent examples of a medium-scale Second Empire house in Pittsburgh's North Side. Though a common style throughout Pittsburgh in the 1870s and 1880s, few freestanding houses of this size have survived in the city, particularly frame examples.³¹ The straight-sloped mansard roof of Brashear's Perrysville Avenue residence was the defining characteristic for many Pittsburgh houses in the Second Empire style. It was common on row houses in working class neighborhoods, while larger Second Empire houses frequently had mansards with curved surfaces. Though the house has many details that are typical of Second Empire and Italianate style houses in Pittsburgh, such as segmental arches and paired incised brackets, when it was first built, this was an unusually prominent house in an otherwise modest neighborhood, a hilly extension of Allegheny City (now Pittsburgh's North Side). Its large proportions and bulky massing, though typical of a number of similar houses in the Pittsburgh area, make it stand out as an important landmark in this neighborhood. Many other examples of large Second Empire or Italianate homes of Pittsburgh's late nineteenth century leaders have disappeared or have been severely compromised. For instance, there was once a cluster of similar-sized houses along Fifth Avenue at the edge of Pittsburgh's Oakland section, but now nearly all of these houses have been replaced by apartment buildings, newer large houses, or other buildings.

The association of the house with Brashear and his activities extends somewhat beyond Brashear's lifetime, not only because of its proximity to the factory, which continued to operate through the World War II years and into the 1950s, but also as the home of his son-in-law and collaborator, James McDowell for a short time after Brashear's death. It remained a single-family home for half a century after Brashear's decease, and for two thirds of that time, the factory continued to operate next to it.

The Brashear factory, as it hovers over the rear of the house, literally demonstrates and yet figuratively symbolizes the intimate relationship Brashear maintained between his home life and his work. As a scientist, innovator, and educator, Brashear was the kind of person whose work was interwoven into all his day-to-day activities. He not only moved between the house and factory in his daily activities, but also served for four years as the acting chancellor of a university that was located in a campus that then stood just past the factory building. Although the university campus only occupied this location for two decades, the house, factory, and campus coexisted next to one another almost the entire time that Brashear lived here. The campus is long gone, but the configuration of the property that remains, with the house in the shadow of the factory, shows that Brashear's work was ever-present in his life.

ENDNOTES

¹ Interview with Bart Fried, Brashear researcher, by Brendan Froeschl, 3/8/01.

² Brashear, John A. *The Story of John Alfred Brashear, the Man Who Loved the Stars*, published by The Brashear Association, Pittsburgh, Pa., p. 156-166; most of the material in the Statement of Significance was prepared first prior to 2000 as a draft by Steven Wolmark, a representative of PHASE, the property owner at the time. It was revised by Brendan Froeschl and Terry Necciai for a nomination draft submitted at that time. It has been revised again for the present document.

³ Ibid.

⁴ Ibid., 161.

⁵ Gaul & Eiseman.

⁶ Ibid..

⁷ For further explanation, see National Register nomination for the Charleroi Historic District, NR, 2007.

⁸ See: <http://explorepahistory.com/displayimage.php?imgId=6364> .

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⁹ For further explanation, see National Register nomination for the Charleroi Historic District, NR, 2007.

¹⁰ Interview with Bart Fried, Brashear researcher, by Brendan Froeschl, 3/8/01.

¹¹ Brashear, p. 6.

¹² Ibid., p. 7.

¹³ "Dr. John A. Brashear Dies," *Pittsburgh Post*, 9 April 1920, p. 1.

¹⁴ Brashear, p. 25.

¹⁵ This house was destroyed by fire in the 1950s, leaving the Perrysville Avenue properties as the only surviving local buildings relating to John Brashear.

¹⁶ Brashear, p. 33.

¹⁷ Ibid., p. 80.

¹⁸ Gaul, Harriet and Ruby Eiseman, *John Alfred Brashear, Scientist and Humanitarian*, University of Pennsylvania Press, Philadelphia: 1940; p. 91.

¹⁹ Ibid., pp. 88-91.

²⁰ William Thaw was the father of Harry K. Thaw, who, in 1906, was in the national spotlight in the "murder of the century" trial after shooting noted New York architect Stanford White over White's relationship with Harry Thaw's wife, the famous model Evelyn Nesbit.

²¹ Brashear, pp. 94-96.

²² Ibid.

²³ Ibid., p. 95-96.

²⁴ Ibid., p. 67.

²⁵ Ibid., p. 92.

²⁶ *Annual Report of the Chief Factory Inspector, 1893-1912*.

²⁷ Brashear, p. 85-86.

²⁸ "Brashear works to remain here," *Pittsburgh Chronicle Telegraph*, 14 June 1926.

²⁹ "Making lasers deadly accurate," *Pittsburgh Post-Gazette*, 14 June 2000.

³⁰ Interview with Donald Tait by Steven Wolmark.

³¹ There are only a few remaining, intact, freestanding frame Italianate houses in the Pittsburgh area. Nearly all have changed window styles and aluminum or vinyl siding. However, many more brick Italianate buildings have survived.

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"Brashear works to remain here," *Pittsburgh Chronicle Telegraph,* 14 June 1926.

Eiseman, Ruby and Harriet A. Gaul, *John Alfred Brashear: Scientist and Humanitarian,* Philadelphia: University of Pennsylvania Press, 1940, pages 84, 113, 136, 166, 182, 195.

"Making lasers deadly accurate," *Pittsburgh Post-Gazette,* 14 June 2000.

Pittsburgh Post, April 9th, 1920. Obituary.

Interview with Donald Tait, nephew of Jane Tait, conducted by Steven Wolmark of PHASE (owners of the building), 10-27-98, copy on file at PHASE office.

The Story of John Alfred Brashear, the Man Who Loved the Stars, published by The Brashear Association, Pittsburgh, Pa., p. 6.

"60 112-in. Job," *Pittsburgh Bulletin Index,* 10 November 1938.

Interview with Bart Fried, Brashear researcher, conducted by Brendan Froeschl, 3-8-01.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67 has been requested)
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
 - Other State agency
 - Federal agency
 - Local government
 - University
 - Other
- Name of repository: _____

Historic Resources Survey Number (if assigned): N/A

Brashear, John A., House and Factory
Name of Property

Allegheny Co., PA
County and State

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

Name of Property: John A. Brashear House and Factory
City or Vicinity: Pittsburgh
County: Allegheny State: Pennsylvania
Photographer: Terry A. Necciai, RA
Date Photographed: August 2009

All Photos were printed by an HP Photosmart A636 using HP Vivera Inks on HP Premium Plus Photo Paper

Description of Photograph(s) and number:

| | | |
|----------|--|----------------------|
| 1 of 30 | View of Brashear House from street | looking East |
| 2 of 30 | Brashear House porch | looking East |
| 3 of 30 | Brashear House porch, end view | looking South |
| 4 of 30 | Brashear House boxed bay window | looking Southeast |
| 5 of 30 | Brashear House semi-hexagonal bay window | looking Northeast |
| 6 of 30 | Brashear House back corner of gathering room addition | looking Northwest |
| 7 of 30 | Brashear House rear elevation from factory | looking West |
| 8 of 30 | Brashear House Gathering Room chimney | looking Southwest |
| 9 of 30 | Brashear House Gathering Room chimney from interior | looking East |
| 10 of 30 | Brashear House dormer detail | looking West |
| 11 of 30 | Brashear House interior view of boxed bay | looking Northwest |
| 12 of 30 | Brashear House interior view of semi-hexagonal bay | looking South |
| 13 of 30 | Brashear House view into Gathering Room | looking East |
| 14 of 30 | Brashear House view to Gathering Room from Kitchen | looking South |
| 15 of 30 | Brashear House--view of details between Kitchen and Gathering Room | looking Northeast |
| 16 of 30 | Brashear House new modern stairway from second to third floor | looking North |
| 17 of 30 | Brashear House attic dormers | looking Southeast |
| 18 of 30 | Brashear House basement details — wood partitions at stairs | looking East |
| 19 of 30 | Brashear House — Wash House | looking East |
| 20 of 30 | Brashear Factory, Honduras Street side and corner | looking Northwest |
| 21 of 30 | Brashear Factory, oblique view of west elevation (side toward house) | looking Northeast |
| 22 of 30 | Brashear Factory, porch detail | looking Northwest |
| 23 of 30 | Brashear Factory, north side elevation | looking Southwest |
| 24 of 30 | Brashear Factory, paired windows | looking East |
| 25 of 30 | Brashear Factory, Queen Anne door detail | looking East |
| 26 of 30 | Brashear Factory, south elevation windows | looking North |
| 27 of 30 | Brashear Factory, concrete block exterior corner | looking Northwest |
| 28 of 30 | Brashear Factory, first floor interior | looking North |
| 29 of 30 | Brashear Factory, first floor ceiling detail | looking North and up |
| 30 of 30 | Brashear Factory, second floor work space with work bench | looking North |

Property Owner:

Brashear, John A., House and Factory
Name of Property

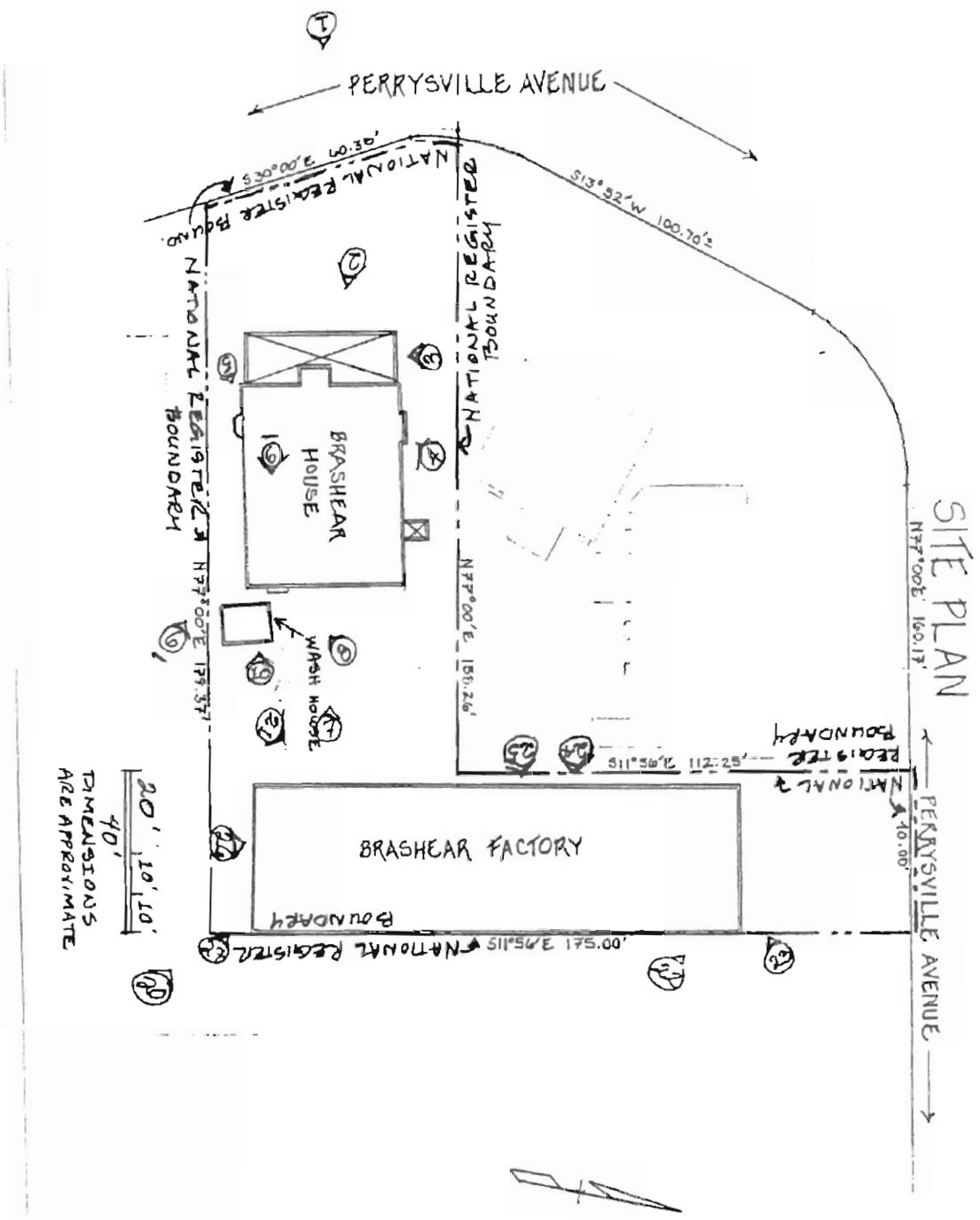
Allegheny Co., PA
County and State

(Complete this item at the request of the SHPO or FPO.)

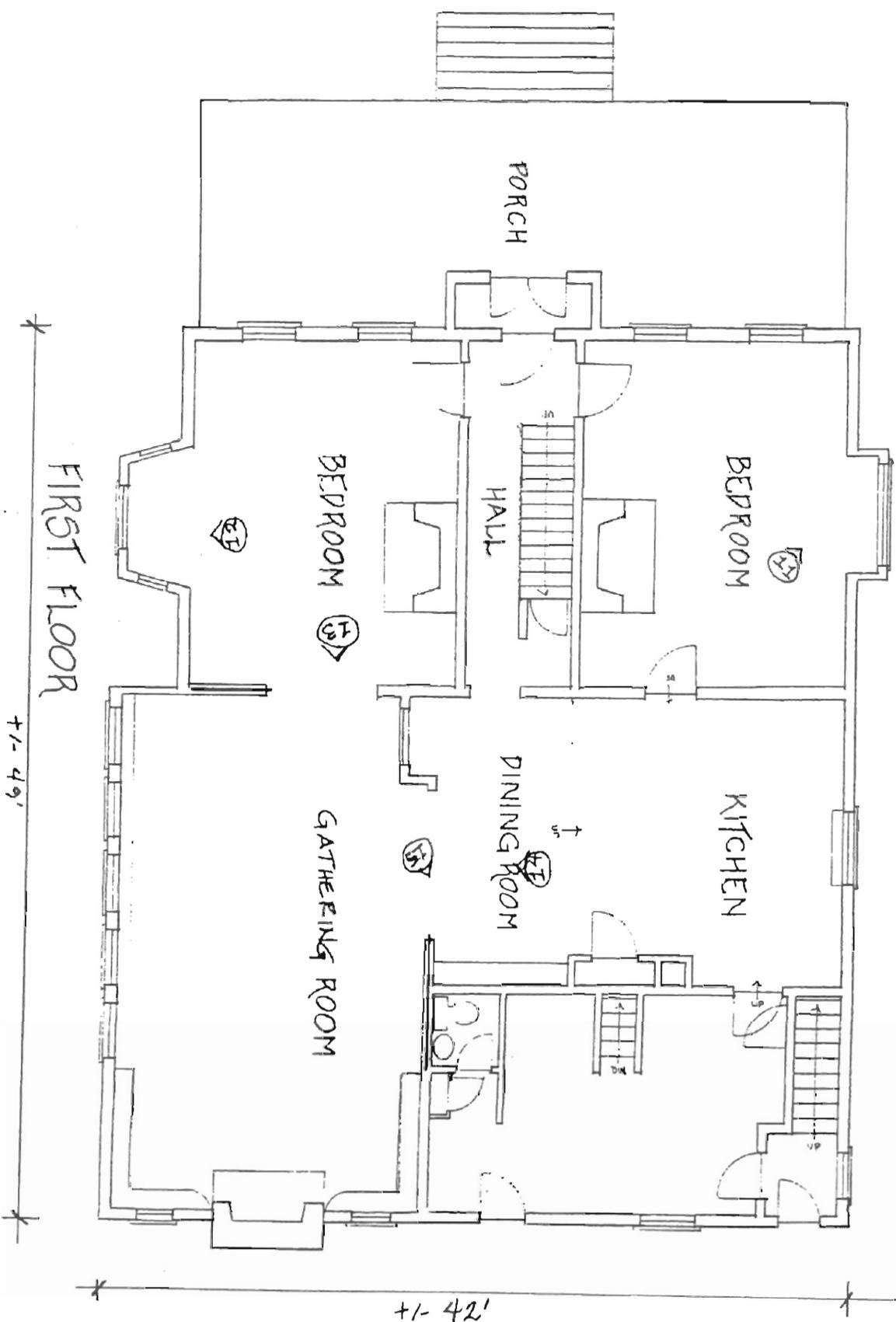
name (See Continuation Sheet)
street & number telephone
city or town state zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

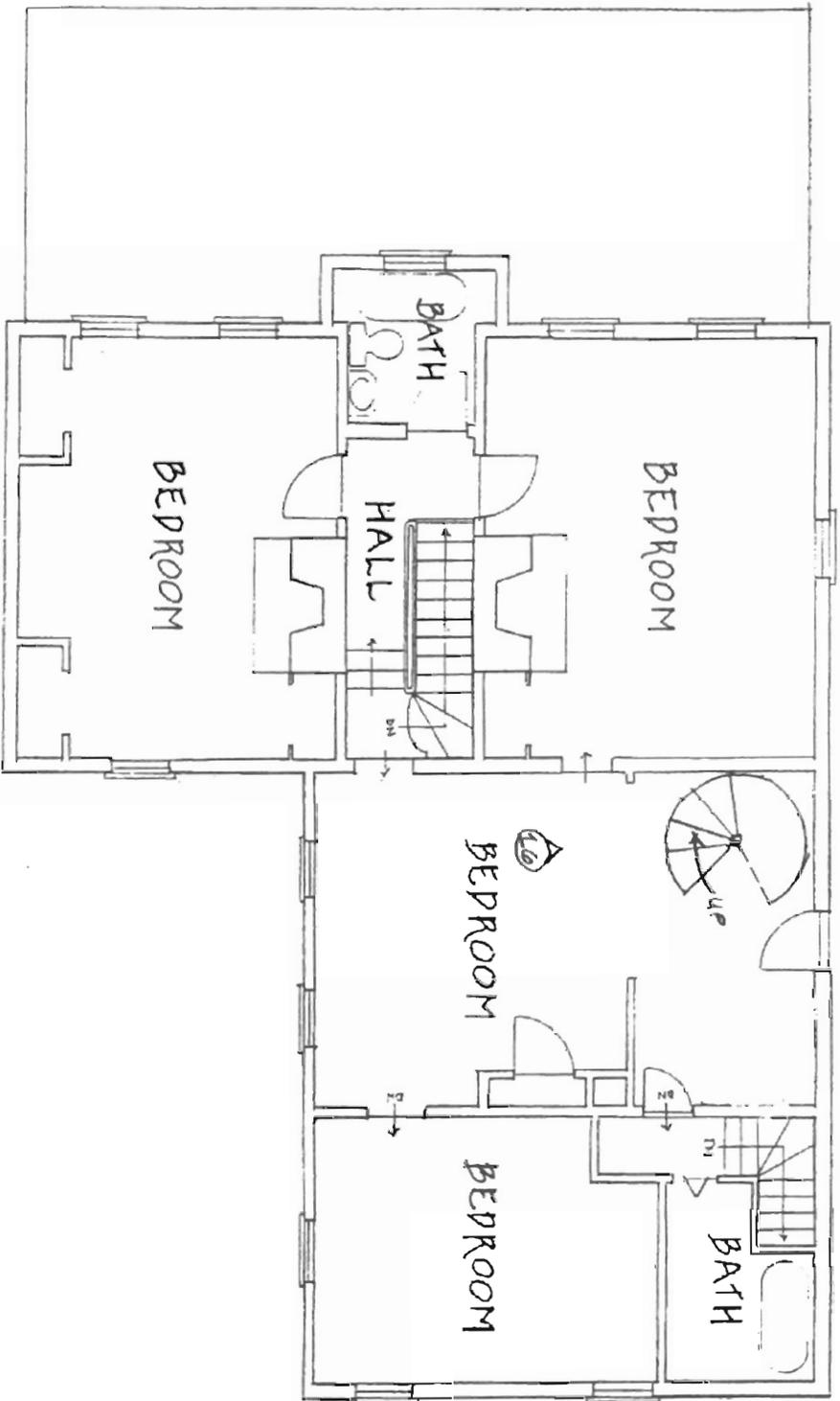
Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.



BRASHEAR, JOHN A., HOUSE AND
 FACTORY
 PITTSBURGH, ALLEGHENY COUNTY,
 PENNSYLVANIA

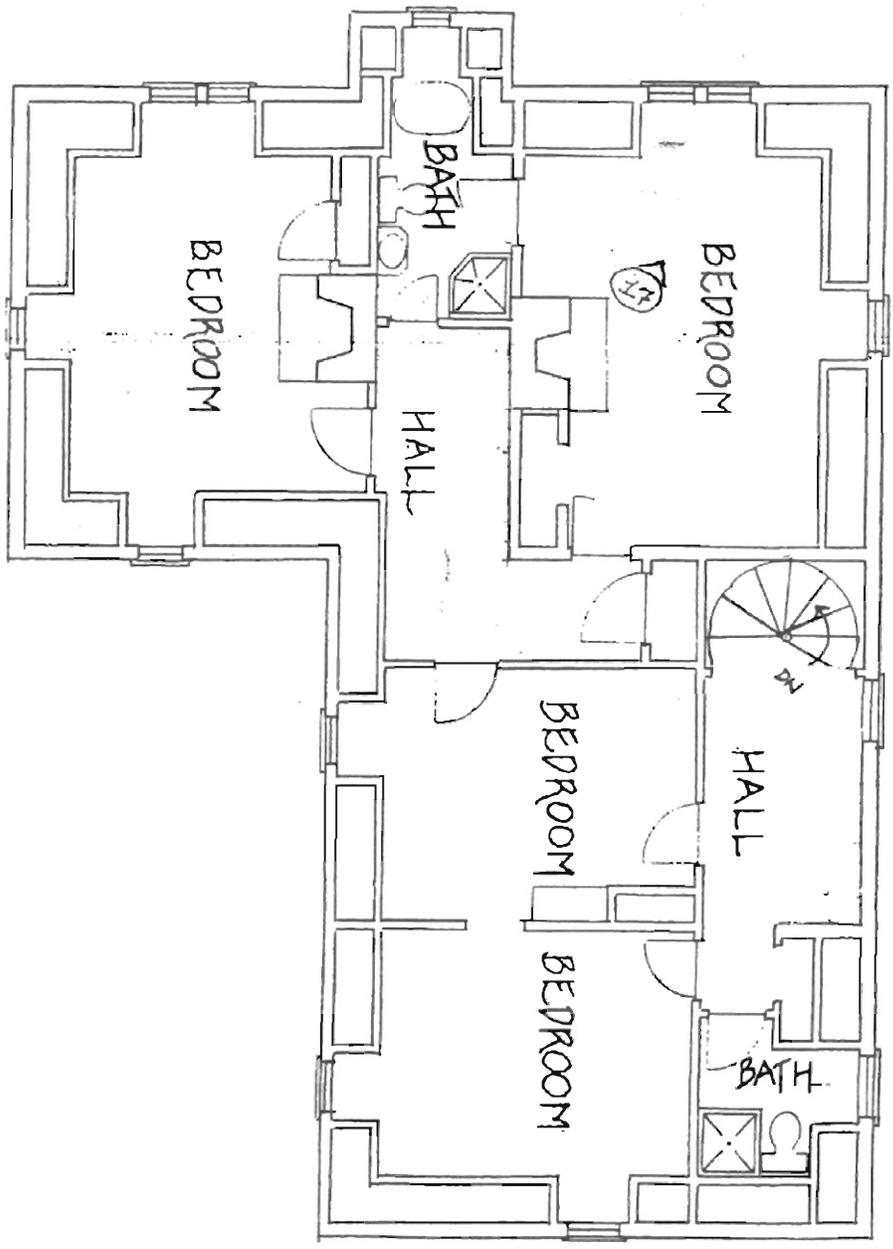


BRASHEAR, JOHN A., HOUSE AND
 FACTORY
 PITTSBURGH, ALLEGHENY COUNTY,
 PENNSYLVANIA



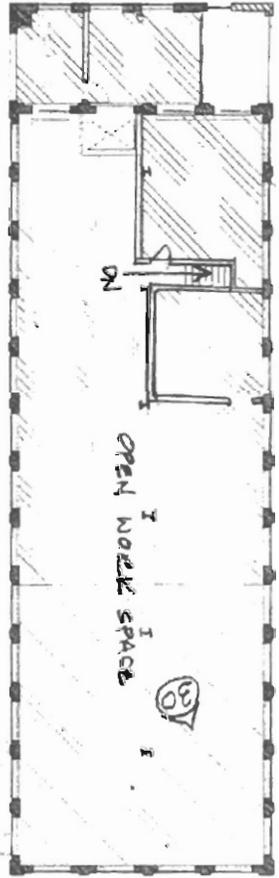
SECOND FLOOR

BEASHEAR, JOHN A., HOUSE AND
 FACTORY
 PITTSBURGH, ALICE SHENY COUNTY,
 PENNSYLVANIA



THIRD FLOOR

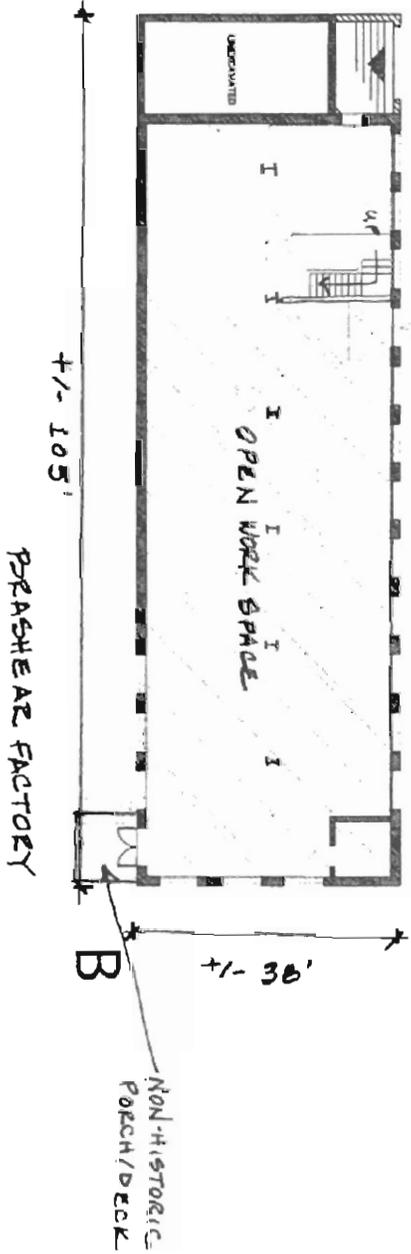
BRASHHEAR, JOHN A., HOUSE AND
 FACTORY
 PITTSBURGH, ALLEGHENY COUNTY,
 PENNSYLVANIA



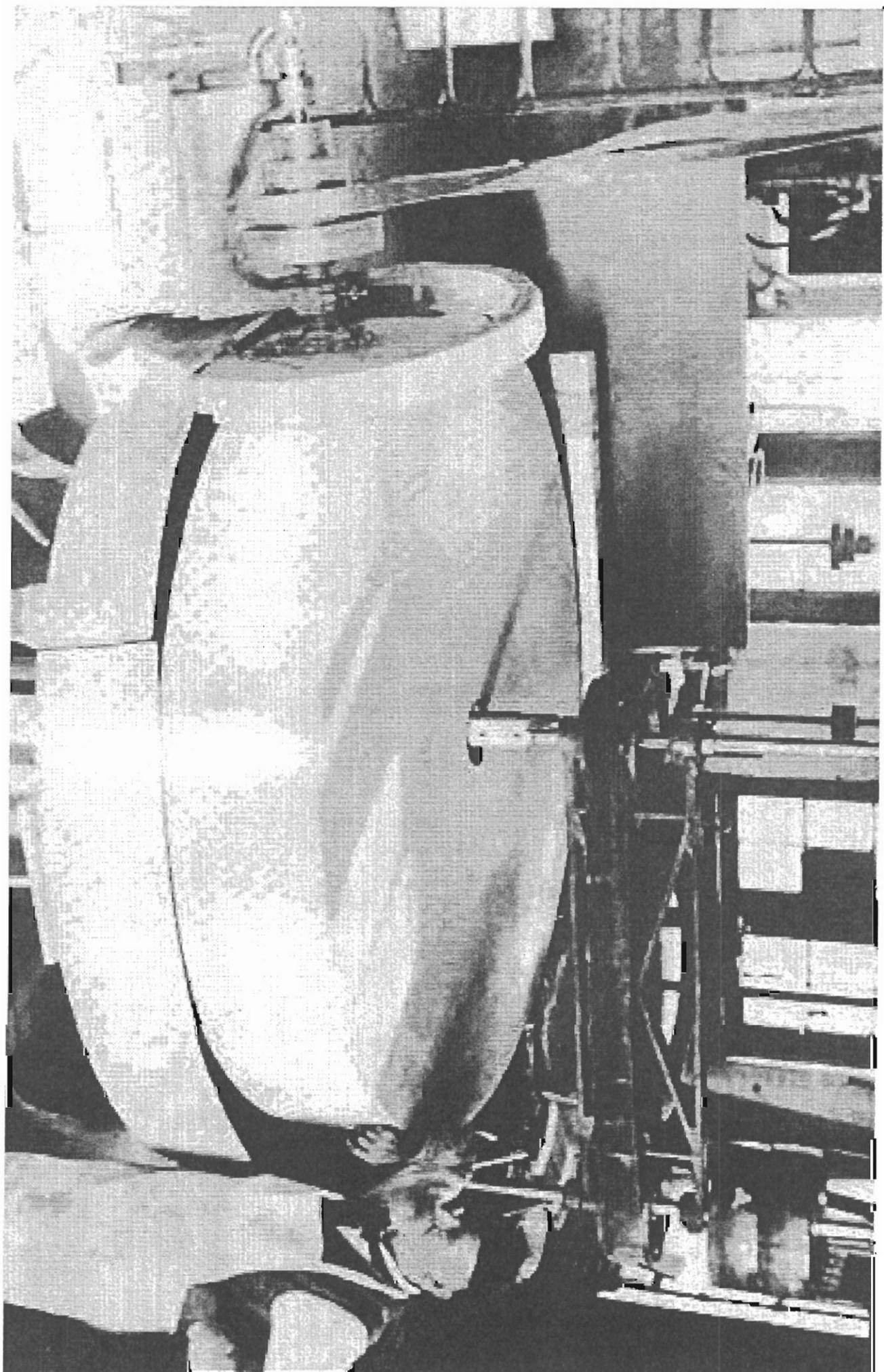
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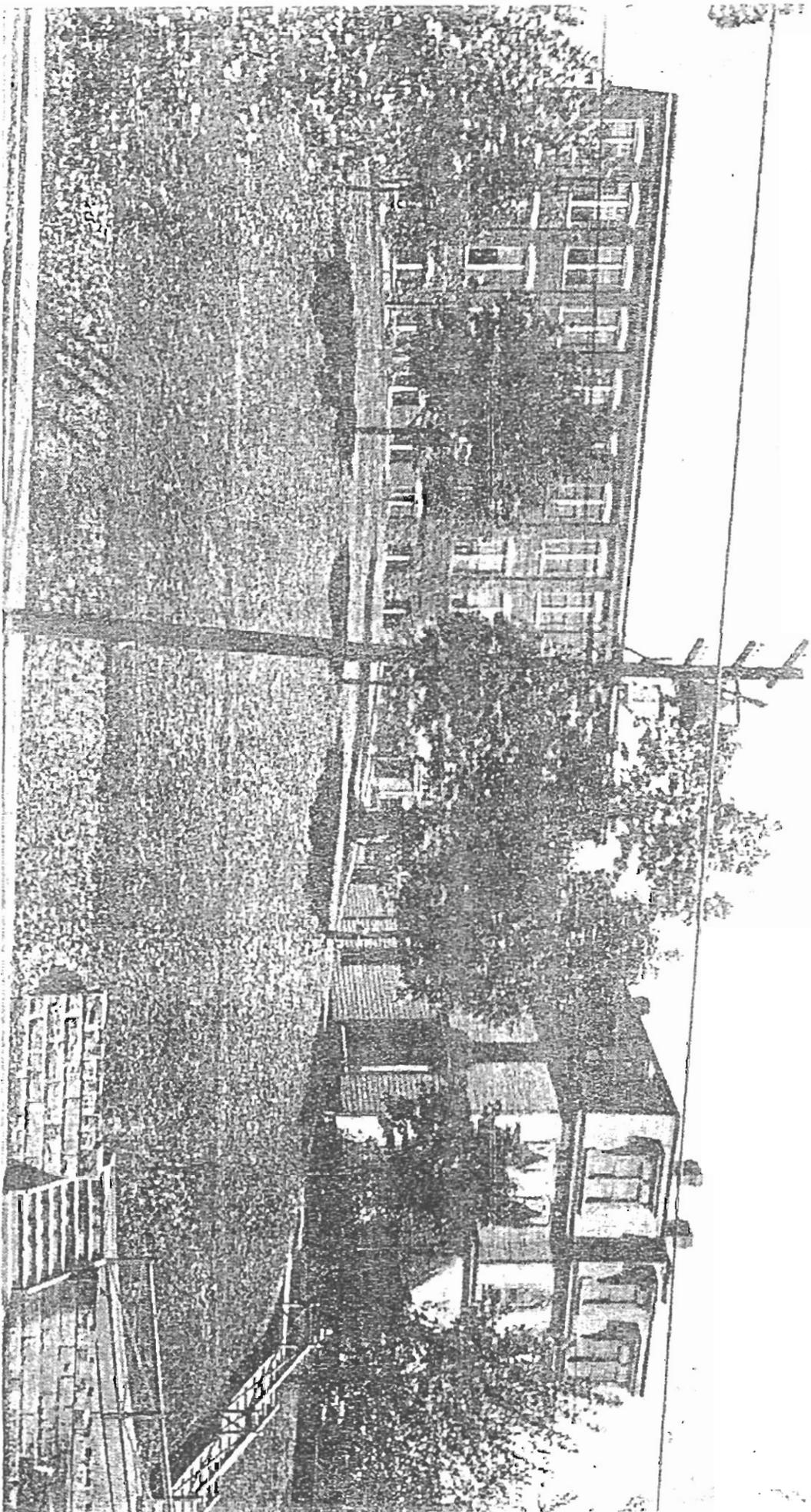


1



PRASHERE, JOHN A., HOUSE AND
FACTORY
PITTSBURGH, ALLEGHENY COUNTY,
PENNSYLVANIA





THE FERRYSVILLE AVENUE HOME OF JOHN A. BRASHEAR, WITH THE CELEBRATED WORKS
IN THE REAR

4481

4480

4478

4477

Brashear, John A,
House and Factory

27° 30"

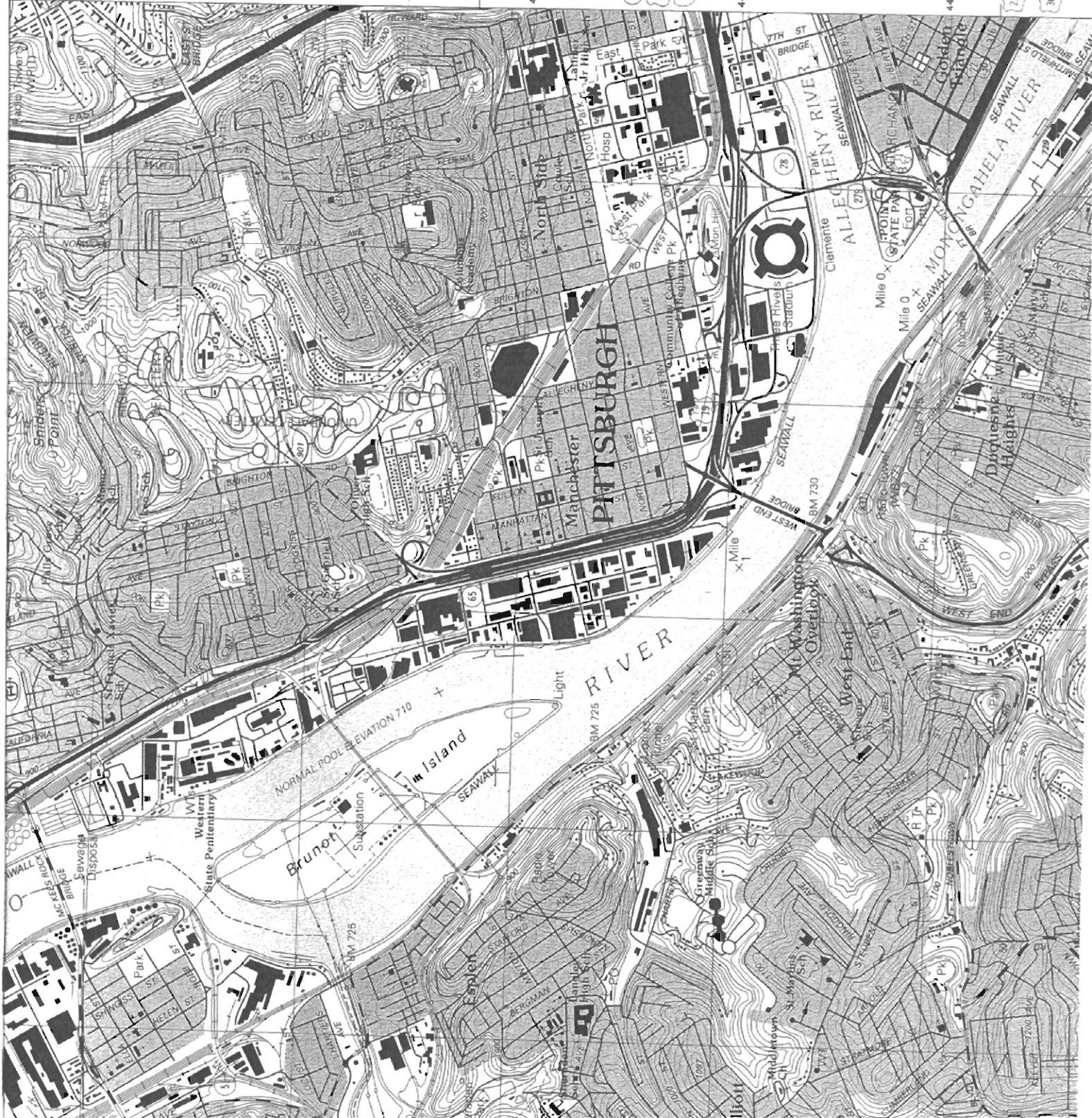
4479 Allegheny Co., PA
Pittsburgh West Quad

Zone 17

E 583680

N 4479610

(28) (18) (278)



(22)

(30)



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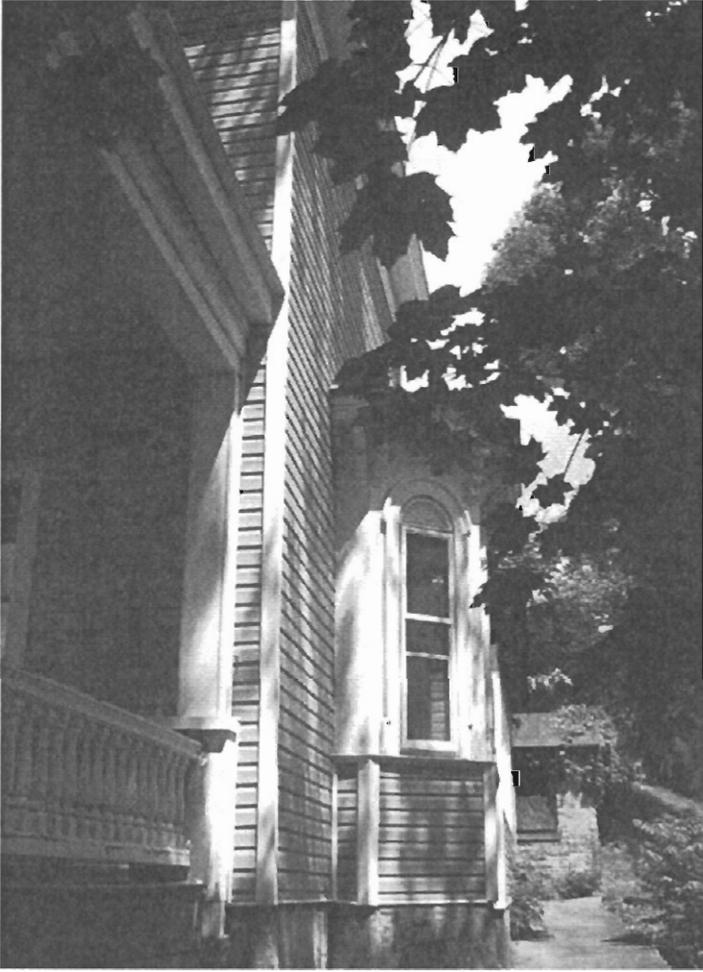
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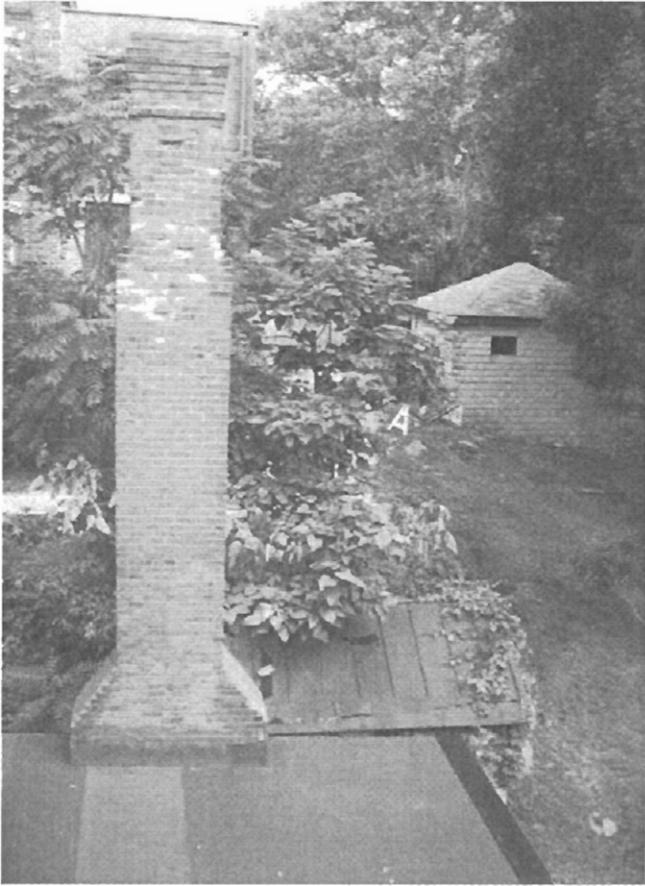
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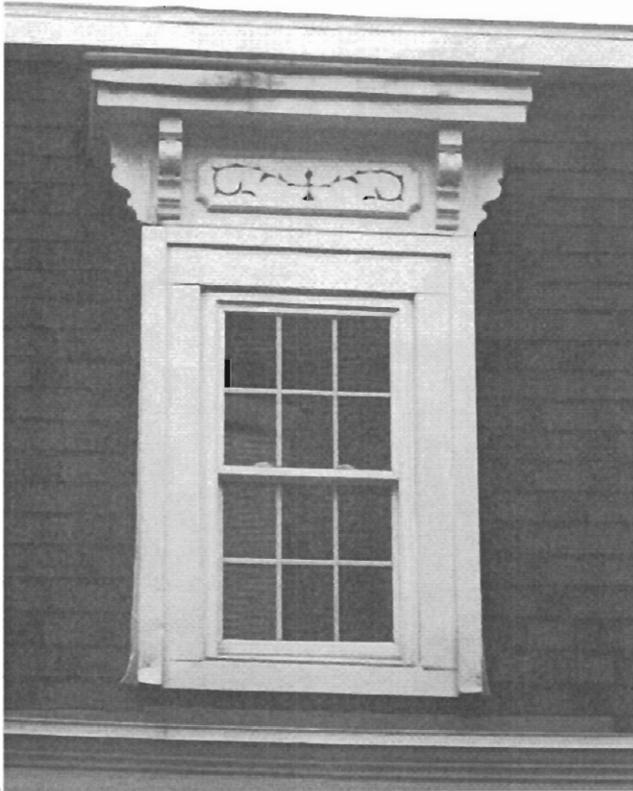
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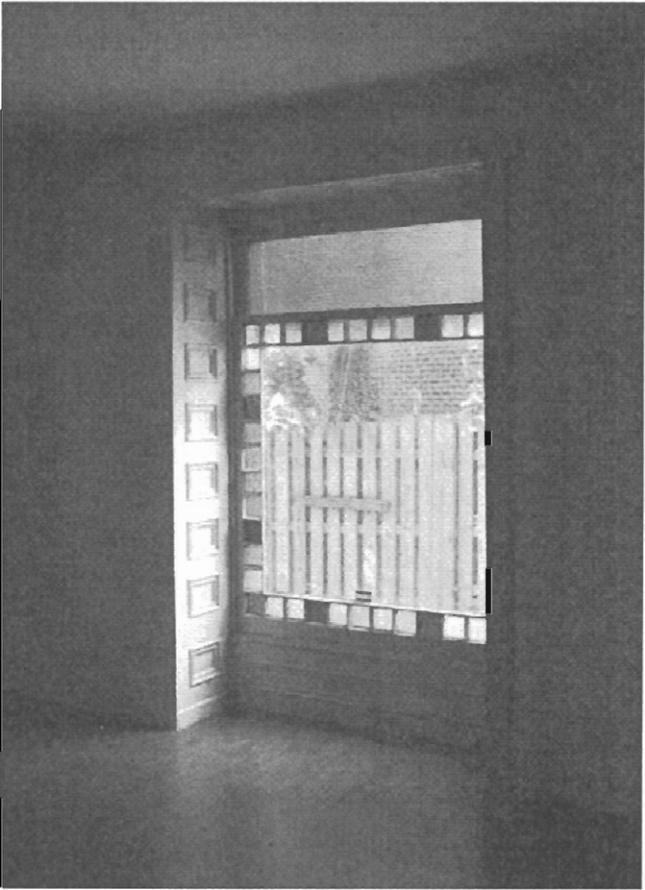
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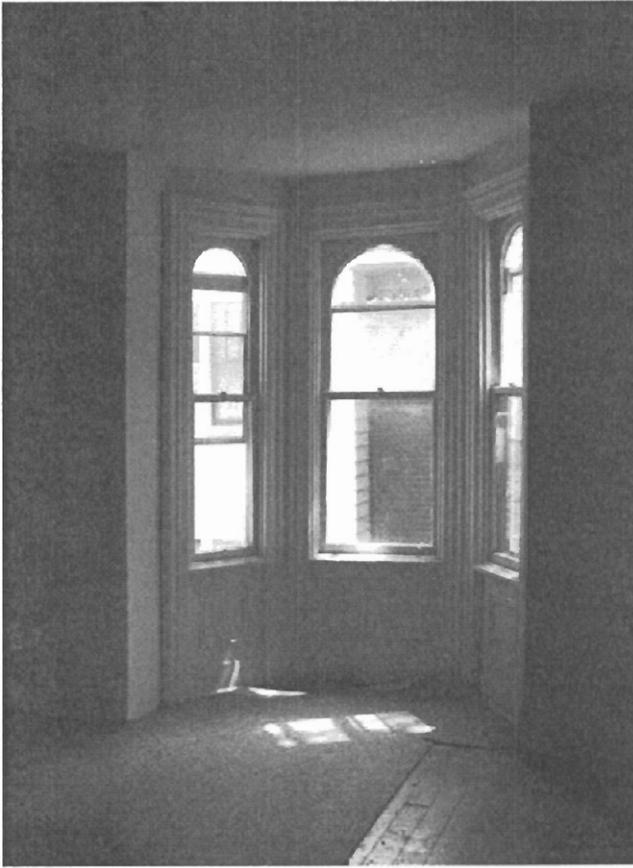
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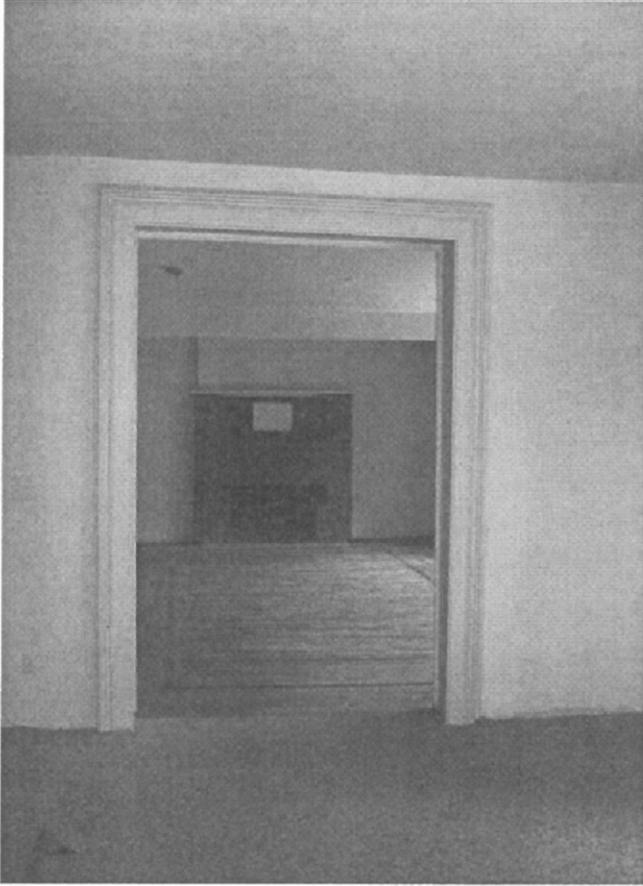
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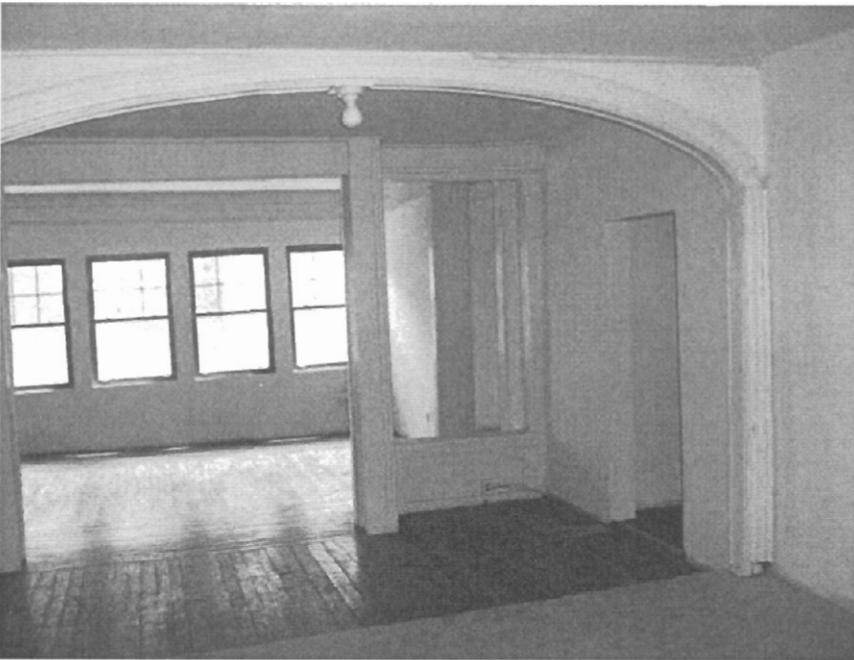
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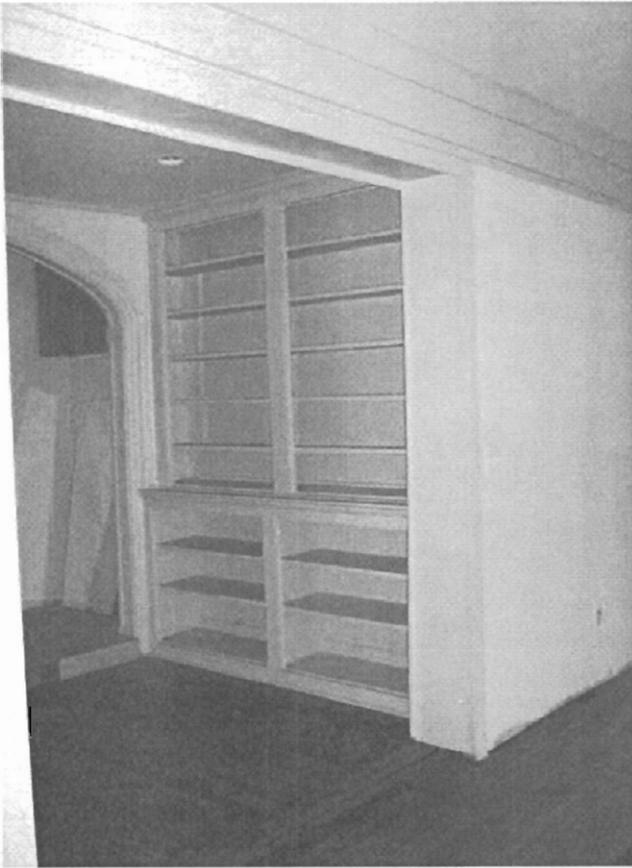
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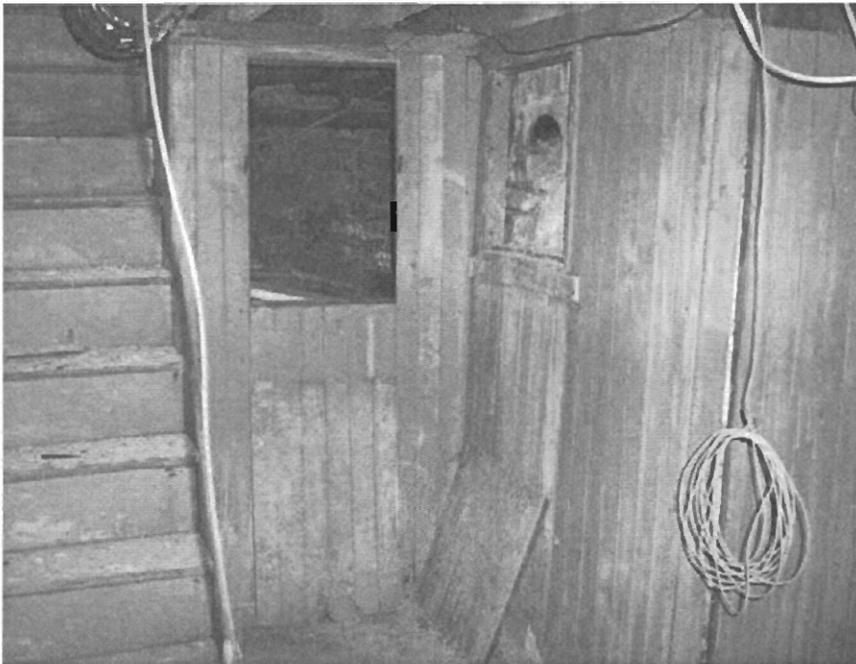
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17.



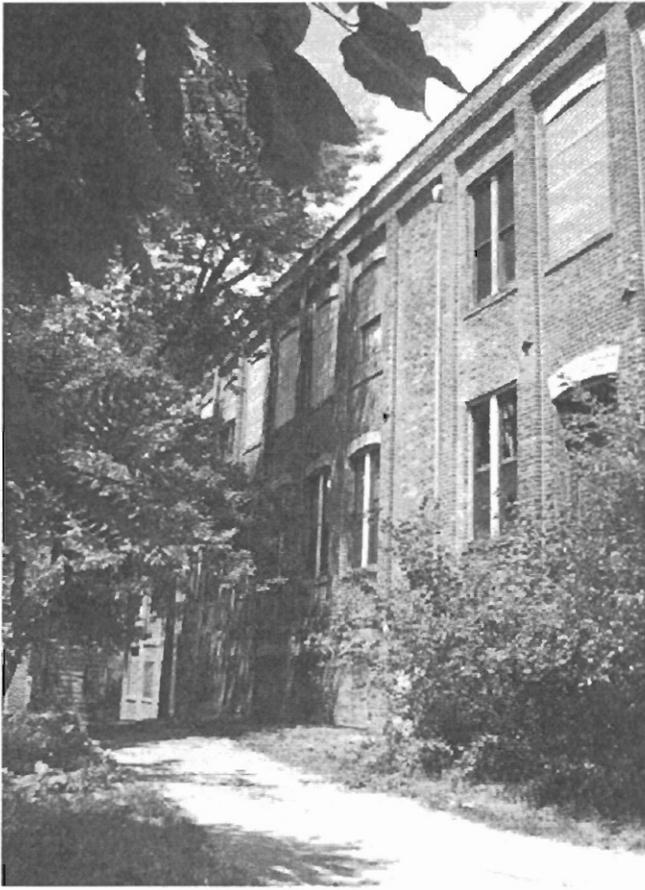
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