



Herron Hill Pumping Station

City of Pittsburgh Historic Landmark Nomination

Prepared by Preservation Pittsburgh



412.256.8755
1501 Reedsdale St., Suite 5003
Pittsburgh, PA 15233
www.preservationpgh.org

March, 2020.



INDIVIDUAL PROPERTY HISTORIC NOMINATION FORM

HRC Staff Use Only

Date Received:
 Parcel No.:
 Ward:
 Zoning Classification:
 Bldg. Inspector:
 Council District:

Fee Schedule

Please make check payable to *Treasurer, City of Pittsburgh*
 Individual Landmark Nomination: \$100.00
 District Nomination: \$250.00

1. HISTORIC NAME OF PROPERTY:

Herron Hill Pumping Station (Pumping Station
 Building and Laboratory Building)

2. CURRENT NAME OF PROPERTY:

Herron Hill Pumping Station

3. LOCATION

- a. Street: 4501 Centre Avenue
- b. City, State, Zip Code: Pittsburgh, PA 15213-1501
- c. Neighborhood: North Oakland

4. OWNERSHIP

- d. Owner(s): City of Pittsburgh
- e. Street: City-County Building, 414 Grant Street
- f. City, State, Zip Code: Pittsburgh, PA 15219 Phone: () -

5. CLASSIFICATION AND USE – Check all that apply

<u>Type</u>	<u>Ownership</u>	<u>Current Use:</u>
<input checked="" type="checkbox"/> Structure	<input type="checkbox"/> Private – home	<u>Water pumping station</u>
<input type="checkbox"/> District	<input type="checkbox"/> Private – other	_____
<input type="checkbox"/> Site	<input checked="" type="checkbox"/> Public – government	_____
<input type="checkbox"/> Object	<input type="checkbox"/> Public - other	_____
	<input type="checkbox"/> Place of religious worship	_____

6. NOMINATED BY:

- a. Name: Matthew W. C. Falcone
- b. Street: 1501 Reedsdale Street, Suite 5003
- c. City, State, Zip: Pittsburgh, PA 15233
- d. Phone: (412) 256-8755 Email: mfalcone@preservationpgh.org

7. DESCRIPTION

Provide a narrative description of the structure, district, site, or object. If it has been altered over time, indicate the date(s) and nature of the alteration(s). (Attach additional pages as needed)

If Known:

- a. Year Built: 1896 (pumping station); ca. 1897 (laboratory)
- b. Architectural Style: Classical Revival
- c. Architect/Builder: William S. Fraser

Narrative: See attached.

8. HISTORY

Provide a history of the structure, district, site, or object. Include a bibliography of sources consulted. (Attach additional pages as needed.) Include copies of relevant source materials with the nomination form (see Number 11).

Narrative: See attached.

9. SIGNIFICANCE

The *Pittsburgh Code of Ordinances, Title 11, Historic Preservation, Chapter 1: Historic Structures, Districts, Sites and Objects* lists ten criteria, at least one of which must be met for Historic Designation. Describe how the structure, district, site, or object meets one or more of these criteria and complete a narrative discussing in detail each area of significance. (Attach additional pages as needed)

The structure, building, site, district, object is significant because of (check all that apply):

- 1. Its location as a site of a significant historic or prehistoric event or activity;
- 2. Its identification with a person or persons who significantly contributed to the cultural, historic, architectural, archaeological, or related aspects of the development of the City of Pittsburgh, State of Pennsylvania, Mid-Atlantic region, or the United States;
- 3. Its exemplification of an architectural type, style or design distinguished by innovation, rarity, uniqueness, or overall quality of design, detail, materials, or craftsmanship;
- 4. Its identification as the work of an architect, designer, engineer, or builder whose individual work is significant in the history or development of the City of Pittsburgh, the State of Pennsylvania, the Mid-Atlantic region, or the United States;
- 5. Its exemplification of important planning and urban design techniques distinguished by innovation, rarity, uniqueness, or overall quality of design or detail;

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6. Its location as a site of an important archaeological resource;
 7. Its association with important cultural or social aspects or events in the history of the City of Pittsburgh, the State of Pennsylvania, the Mid-Atlantic region, or the United States;
 8. Its exemplification of a pattern of neighborhood development or settlement significant to the cultural history or traditions of the City, whose components may lack individual distinction;
 9. Its representation of a cultural, historic, architectural, archaeological, or related theme expressed through distinctive areas, properties, sites, structures, or objects that may or may not be contiguous; or
 10. Its unique location and distinctive physical appearance or presence representing an established and familiar visual feature of a neighborhood, community, or the City of Pittsburgh.

Narrative: See attached.

10. INTEGRITY

In addition, the ordinance specifies that “Any area, property, site, structure or object that meets any one or more of the criteria listed above shall also have sufficient integrity of location, design, materials, and workmanship to make it worthy of preservation or restoration”. (Attach additional pages as needed)

Narrative: _____

11. NOTIFICATION/CONSENT OF PROPERTY OWNER(S)

1.3(a)(2) Community information process.

Preceding submission of a nomination form for a District, the Historic Review Commission shall conduct at least one (1) public information meeting within or near the boundaries of the proposed district, which shall include at least one (1) member of the Department of City Planning and one (1) Commission member, to discuss the possible effects of designation. Notice shall be given to the owners of property in the proposed district in accordance with Section 1.3(b) below. The final public information meeting shall be held no more than six months before the nomination form is submitted.

1.3(a)(1)(a) Subsection F.

In the case of a nomination as a Historic District, by community-based organizations or by any individual, but in either event the nomination shall be accompanied by a petition signed by the owners of record of twenty-five (25) percent of the properties within the boundaries of the proposed District.

- Please attach documentation of your efforts to gain property owner’s consent.-

** The nomination of any religious property shall be accompanied by a signed letter of consent from the property’s owner.

12. PHOTO LOGS: *Please Attach*

13. BIBLIOGRAPHY: *Please Attach*

14. NOMINATION FORM PREPARED BY:

a. Name: Jeff Slack, AICP, Principal, Time & Place, LLC for Preservation Pittsburgh

b. Street: 1651 Beechwood Boulevard

c. City, State, Zip: Pittsburgh, PA 15217

d. Phone: (412) 8025406 Email: j_h_slack@yahoo.com

e. Signature: _____



HISTORIC NOMINATION – INSTRUCTIONS

INSTRUCTIONS FOR FILLING OUT THE NOMINATION FORM

1. Indicate the original name of the property if it is currently known by a different name; e.g. Union Station.
2. Indicate the current name of the property
3. Indicate the street address for the property. For districts, attach a separate sheet listing the street address of each property included in the nomination and a clear street map of the area showing the boundaries of the proposed district.
4. Indicate the owner of the property and his or her mailing address. For districts, attach a separate sheet listing the owner of each property and his or her mailing address.
5. Check the classification as indicated.
 - a. **“Historic Structure”** means anything constructed or erected, the use of which requires directly or indirectly, a permanent location on the land, including walks, fences, signs, steps and sidewalks at which events that made a significant contribution to national, state or local history occurred or which involved a close association with the lives of people of nations, state or local significance; or an outstanding example of a period, style, architectural movement, or method of construction; or one of the last surviving works of a pioneer architect, builder or designer; or one of the last survivors of a particular style or period of construction.
 - b. **“Historic District”** means a defined territorial division of land which shall include more than one (1) contiguous or related parcels of property, specifically identified by separate resolution, at which events occurred that made a significant contribution to national, state, or local history, or which contains more than one historic structure or historic landmarks, or which contains groups, rows or sets of structures or landmarks, or which contains an aggregate example of a period, style, architectural movements or method of construction, providing distinguishing characteristics of the architectural type or architectural period it represents.
 - c. **“Historic Site”** means the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure whether standing, ruined or vanished, where the location itself maintains historical or archaeological value regardless of the value of any existing structures.
 - d. **“Historic Object”** means a material thing of historic significance for functional, aesthetic cultural or scientific reasons that may be, by nature or design, moveable yet related to a specific setting or environment.
6. Indicate the person(s) responsible for the nomination. Please note: According to the Historic Preservation Ordinance:

“Nomination of an area, property, site, or object for consideration and designation as a Historic Structure, Historic District, Historic Site, or Historic Object may be submitted to the Historic Review Commission by any of the following:

- a. The Mayor of the City of Pittsburgh
 - b. A Member of the Historic Review Commission
 - c. A Member of the City Planning Commission
 - d. A Member of the Pittsburgh City Council
 - e. The Owner of Record or any person residing in the City of Pittsburgh for at least one year (for the nomination of a Historic Structure, Site or Object)
 - f. A signed petition of 25% of the owners of record (for the nomination of a Historic District)
7. Write a physical description of the nominated property or district. Include the following information as applicable:
- architectural style(s)
 - arrangement of architectural elements
 - building materials
 - method(s) of construction
 - visual character
 - street pattern
 - density
 - type and arrangement of buildings
 - topography
 - history of the development of the area
8. Provide a narrative history of the structure, district, site, or object. Include the following information when available:
- History of the development of the area;
 - Circumstances which brought the structure, district, site, or object into being;
 - Biographical information on architects, builders, developers, artisans, planners, or others who created or contributed to the structure, district, site, or object;
 - Contextual background on building type(s) and/or style(s);
 - Importance of the structure, district, site, or object in the larger community over the course of its existence.
 - Include a bibliography of all sources consulted at the end. Where historical information is uncertain or disputed, reference sources in the text.
9. Listed below are the categories and criteria for historic designation as set forth in the Pittsburgh Historic Preservation Ordinance. Describe in detail how the structure, district, site, or object meets one or more of the criteria. According to that legislation in Section 1.4 of the Pittsburgh Historic Preservation Ordinance, *Criteria for Designation*, a building must meet at least one of the following criteria in order to be designated:
1. Its location as a site of a significant historic or prehistoric event or activity;
 2. Its identification with a person or persons who significantly contributed to the cultural, historic, architectural, archaeological, or related aspects of the development of the City of Pittsburgh, State of Pennsylvania, Mid-Atlantic region, or the United States;
 3. Its exemplification of an architectural type, style or design distinguished by innovation, rarity, uniqueness, or overall quality of design, detail, materials, or craftsmanship;
 4. Its identification as the work of an architect, designer, engineer, or builder whose individual work is significant in the history or development of the City of Pittsburgh, the State of Pennsylvania, the Mid-Atlantic region, or the United States;

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5. Its exemplification of important planning and urban design techniques distinguished by innovation, rarity, uniqueness, or overall quality of design or detail;
 6. Its location as a site of an important archaeological resource;
 7. Its association with important cultural or social aspects or events in the history of the City of Pittsburgh, the State of Pennsylvania, the Mid-Atlantic region, or the United States;
 8. Its exemplification of a pattern of neighborhood development or settlement significant to the cultural history or traditions of the City, whose components may lack individual distinction;
 9. Its representation of a cultural, historic, architectural, archaeological, or related theme expressed through distinctive areas, properties, sites, structures, or objects that may or may not be contiguous; or
 10. Its unique location and distinctive physical appearance or presence representing an established and familiar visual feature of a neighborhood, community, or the City of Pittsburgh.
- 10.** In addition, the ordinance specifies that “Any area, property, site, structure or object that meets any one or more of the criteria listed above shall also have sufficient integrity of location, design, materials, and workmanship to make it worthy of preservation or restoration.”
- 11.** The nomination must be accompanied by evidence that the nominator has made a good-faith effort to communicate his or her interest in the historic designation of this landmark or district to the owner(s) of these properties. Describe how this was done, and attach evidence that the owner(s) of the nominated landmark or of the properties within the nominated district have been informed of the nomination. This may include a copy of a notification letter with a mailing list, a letter confirming phone calls, or a petition signed by affected property owners.
- 12.** Clear photographs of the nominated buildings or districts should accompany the nomination form. The applicant shall include photographs of all elevations of an individual building and its setting, or the front elevation of each building in a district. In the case of closely spaced buildings or rowhouses, several buildings may be included in one photograph. Each photograph must be labeled with the street address of the building(s) and the month and year the photograph was taken.
- 13.** Copies of major supporting documents should accompany the nomination form. Such documents may include, but are not limited to:
- historic photographs;
 - historic and contemporary maps;
 - historic or contemporary texts describing the subject property or district;
 - historic or contemporary texts describing people, places, or events that comprise the historic context of the subject property or district.
 - Oversized materials (such as architectural drawings) and materials too fragile to copy may be accepted.

PLEASE NOTE: It is the responsibility of the nominator to provide the Historic Review Commission and its Staff with information sufficient to fairly evaluate the nomination. **Incomplete nomination forms will not be accepted. Fee must be included. Nominations must be submitted in both electronic and hard-copy format.**

CHECKLIST: *Herron Hill Pumping Station*

- #1-6 Nomination Form:** Address, Ownership, Classification, Nominator Info.
 - #7: Description
 - #8: History
 - #9: Significance
- #10 Integrity**
- #11 Consent of Property Owners**
- #12 Photographs of Property:** numbered and labeled
- #13 List of Supporting Documents**

- Fee**
- Hard-Copy nomination**
- Electronic nomination (Word Format for text).**

Herron Hill Pumping Station – Addenda

7. Description

Provide a narrative description of the structure, district, site, or object. If it has been altered over time, indicate the date(s) and nature of the alteration(s).

Site / Setting

The Herron Hill Pumping Station is located at 4501 Centre Avenue in Pittsburgh's North Oakland neighborhood three miles east of Downtown. The setting is urban, with commercial and residential development ranging from the late-nineteenth century to the modern period. The lot (tax parcel number 27-D-35), is bounded on the south by Centre Avenue, on the east by Dollar Street, on the north by the 1934 Art Deco Royal York Apartments (parcel 26-R-285) and on the west by North Dithridge Street (see Site Plan, Figure 1). The lot contains two buildings: 1) the two-story, red brick, Classical Revival Herron Hill Pumping Station Building, designed by architect William S. Fraser, constructed in 1896, which sits prominently atop a grassy rise facing Centre Avenue, and 2) the two-story, red brick Herron Hill Laboratory Building (ca. 1897), which sits approximately fifty feet behind the Pumping Station Building to the north.

The lot is park-like, with grass lawns along the front (south) and west edges of the property, many mature trees, especially to the north, and winding sidewalks. The lot slopes downhill from west to east, which allows the ground floor of the Pumping Station to have an exposed basement accessible at grade on the east side (Figures 2 and 3). The lot also rises steeply to the north beyond the Laboratory Building, where it ends at a retaining wall marking the edge of the Royal York property (Figures 4 and 5). A short paved driveway from Dithridge Street runs in front of the Pumping Station Building, ending just past the front facade, which can also be accessed by a flight of concrete steps from the public sidewalk. A second driveway from Dollar Street leads to a paved parking area adjacent to the east side of the building, which continues north to a small parking area next to the Laboratory Building. Concrete sidewalks run from the west and south sides of the Laboratory Building and curve along the west side of the Pumping Station Building to the corner at Centre and North Dithridge. From here, a wrought iron fence extends north along the entire west edge of the property.

Neighboring the parcel to the west is the three-story, Tudor Revival-style Pennsylvania Apartments (ca. 1930, 300 North Dithridge, designed by Daniel A. Crone). To the southwest is the ten-story, red brick, white stone and terra cotta Bellefield Dwellings apartment building (1904, 4400 Centre, designed by Carlton Strong). Directly across from the Pumping Station entrance is the towering seventeen-story, 329-unit One on Centre apartment building (2018, 4500 Centre Avenue). To the east is a one-story, painted brick commercial building (4519 Centre Avenue) with an early twentieth-century three-story apartment building to its north (317 North Craig).

Exterior Description—Pumping Station Building

The Herron Hill Pumping Station Building contains two sections: 1) the large, two-story Pump House, which is set back approximately forty feet from Centre Avenue, and 2) the two-story, Boiler House attached on its north side and separated from the Pump House by an interior brick wall. Constructed simultaneously, this two-part arrangement represents the typical building typology for water pumping stations at the time. The Pump House, usually the largest of the two sections due to the size of the original equipment to be contained, was typically the more prominently sited component, with the Boiler House being secondary in size and sometimes of lesser architectural detailing. Pittsburgh's Mission Street Pumping Station (2117 Mission Street) demonstrates this same hierarchy of massing, though the two parts are arranged in a slightly different configuration on their site on the South Side (Figure 6).

The Pump House is two stories tall and consists of a double-height space above grade on the first floor with a ground floor below, exposed on its east side (Figure 7). It continues to serve its original function of pumping water from the Highland Park Reservoir up to the Herron Hill Reservoir for distribution throughout the city. The Boiler House is also two stories in height, though lower in overall height than the Pump House (Figures 8 and 9). Its function and configuration changed when the facility was converted from oil power to electricity in 1931.¹ No longer needed, the boiler equipment was removed and a second floor was subsequently inserted into the original

¹ "Big New Pump Put in Operation," *The Pittsburgh Post-Gazette*, 22 August 1931.

double-height space in 1939.² Today this part of the building houses offices and storage for the Department of Public Works Paving Division and Asphalt Testing Laboratory.

Designed as one building, the Pump House and Boiler House have similar architectural details. The former is four bays wide and five bays deep; the latter three bays wide and four bays deep (Figure 10). Exterior walls are red brick laid in a running bond with smooth mortar joints. The bays on all sides are demarcated by Classically-derived brick pilasters with Tuscan capitals (i.e., a simplified Doric Order with no fluting). Within each bay are large arched openings that originally contained multi-lite, operable, wood sash windows. Sometime in the mid-twentieth century the openings were infilled with brick, but the stone sills and lintels remain. In the Boiler House, multi-lite industrial steel sash windows surrounded by brick infill have been inserted into the openings (mid-twentieth century) to provide light to the office spaces. The pilasters sit atop a coursed sandstone foundation with beaded mortar joints. Atop the arcades, a simple entablature encircles the building. It contains a plain frieze with brick dentils in the cornice (Figure 11).

The four-bay wide, symmetrical, front façade of the building exhibits a higher degree of architectural detailing (Figures 12 and 13). Its two middle bays project slightly and are capped by a triangular pediment with brick dentils in the raking cornices. Here, a rectangular metal grille and brick infill have replaced an original half-round louvered vent. Each pilaster's echinus (i.e., the convex projecting molding of the pilaster capital) contains egg-and-dart ornamentation. The frieze is decorated with carved stone reading "1896 Herron Hill Pumping Station DPW." The arched openings spring from smaller inset pilasters. Each arch is defined by a molded brick intrados and extrados (i.e., the lower and upper curved boundaries, respectively, of the visible face of the arch). At the base of the two middle bays are utilitarian paired steel doors with solid steel transoms (late-twentieth century). The center bay of the three-bay wide rear façade contains a similar projecting gabled pediment (Figures 14 and 15).

Two small additions have been made to the south end of the building over time. On the east façade is a single-story, red brick enclosed loading dock with rolling overhead door, which provides access to a pump room in a vault that extends under the front driveway; on the west façade is a single-story, red brick addition for a boiler room with infilled brick arches (both date from the mid-twentieth century). The roofs of the Pump House and Boiler House are both hipped in form and covered with silver-colored standing seam metal. Historic Sanborn Fire Insurance Company maps indicate iron truss roof construction with wooden roof deck, which was originally covered with slate (the trusses can be seen in the section drawing in Figure 37).

A number of historic photographs show the exterior of the Pumping Station Building shortly after construction. From these, it can be determined that the building had wood, one-over-one, double-hung sash windows on the ground and first stories and wood, center-pivot sash windows on the second story (these would have had a mechanism to allow them to be opened and tilted inward from below); the roof of the Pump House contained two hipped dormers containing louvered ventilators on the east and west sides; the Boiler House had a massive corbeled brick chimney, which was presumably removed in the 1930s when the boilers were removed; the front driveway was gravel; and the east parking and loading area was Belgian block (Figures 16-19).

Interior Description—Pumping Station Building

The first floor of the Pump House contains one large, double-height space (Figure 20). The floor is cast concrete, walls are plaster and retain their original buff-colored tile wainscoting, and the ceiling consists of a grid of corrugated metal panels from the mid-twentieth century. Window openings contain either brick infill or mid-twentieth century multi-lite industrial steel sash windows, which have been painted (Figure 21). In the center of the space, near the front, are electronic controls. Arrayed around the controls throughout the room are five electric pumps (Figure 22). Overhead is the original traveling crane, which Fraser called for in the 1896 request for proposals for the building. It runs along parallel tracks on the east and west walls, which are supported by cast iron columns (Figure 23). This type of crane was a common component in pump houses of this era and were used to set, replace and repair the pumps. The ground floor of the Pump House contains large diameter intake pipes that distribute water up to the pumps (Figure 24). The water, then under increased pressure, returns by pipe to the ground floor. Here, the pipes exit through the west foundation wall and the water it is delivered up to the Herron Hill Reservoir and to water tanks in the Hill District and Squirrel Hill. The underground vault on the south end of the

² "Alteration to Herron Hill Pumping Station for Use as Bureau of Tests Laboratory," Construction Drawings, City of Pittsburgh Department of Public Works, October 1939.

building (beneath the front driveway) contains the sixth pump and access to the loading dock doors of the single-story addition on the east side of the building.

The first floor of the Boiler House section of the building is accessed from the sidewalk on the west side. This level contains a number of perimeter office and storage rooms with an open center space containing office cubicles. Finishes date from the late twentieth-century and include dropped ceilings, vinyl composition tile flooring and walls of painted drywall and painted brick (Figure 25). The ground floor is utilitarian and used primarily for testing and storage. The floors are concrete, walls are painted brick and concrete and the ceiling is the visible underside of metal formwork for the cast concrete first floor above (Figures 26 and 27). Access to grade is in the northeast corner via a steel pedestrian door on the north façade and a steel rolling overhead door on the east façade.

A photograph from 1919 shows the ground level of the Pump House (Figure 28). Much of the water piping is the same or similar to that seen today. However, the first floor above was supported at that time by steel beams rather than concrete. Photographs from 1912 through 1919 show the interior of the Boiler House when it was still one large, double-height open space and illustrate a major construction project in early 1919 to convert the fuel source from gas to oil and to rebuild the brick boiler foundations (Figures 29-35). Construction drawings from 1939 document the insertion of the first floor into the Boiler House after the boilers were removed (Figures 36 and 37). The reconfiguration of this space, having surpassed fifty years in age, is now considered historic in its own right and helps to tell the evolving story of the building.

Exterior Description—Herron Hill Laboratory Building

The Laboratory Building faces west, is three bays wide and five bays deep, rectangular in massing, two stories in height (basement and first floor) and covered by a hip-on-hip roof clad in the same standing seam metal as the Pumping Station Building (Figure 38). Because the building is cut into the hillside like the Pumping Station Building, only one story is visible on the west façade. Its center bay contains a small porch with hipped standing seam metal roof (Figure 39). Materials are similar to those of the Pumping Station Building. Foundation walls are coursed sandstone originally tooled with beaded mortar joints, though many of the joints now appear smooth, having lost their original projecting shape (Figure 40). Rectangular window openings with bricks sills contain two-over-two metal, double-hung sash windows on the south, east and west facades of this level. Access to the ground floor is provided by a door on the south façade.

On the first story, the walls are red brick laid in a running bond with smooth mortar joints. Similar to the Pumping Station Building, the bays of the first story are demarcated by Classically-derived brick pilasters with simple Tuscan capitals. The pilasters rest on a projecting brick stringcourse that encircles the building. The two outer bays of each façade of the first story contain arched window openings, while the inner bays have rectangular openings (Figures 41 and 42). Today, all of these openings contain either multi-lite industrial steel sash windows with surrounding infill brick or have been entirely infilled with brick (mid-twentieth century, possibly at the same time as the fenestration changes to the Pumping Station Building). Around this same time, a large, single-lite picture window was installed on the second floor of the east façade and the openings of the three-side entry porch were bricked in and a steel entry door installed.

When originally constructed around 1897, the Laboratory Building was three stories tall, consisting of full-height exposed basement, first floor and second floor (Figures 43A and 43B). Sometime around 1909, the second floor was removed and the roof reconstructed to its present form (Figures 44 and 45). The reason for this has not been determined, but is confirmed by published RFPs and historic photographs. In 1900, the Laboratory Building was described in *Popular Science Monthly* as housing laboratories for the Bureau of Water Supply and Distribution on the ground floor [basement] and first floor (for water analysis) and Bureau of Engineering on the second floor (for cement testing). The building sits largely vacant today, being used minimally for storage.³ Many of these testing functions were relocated to the Boiler House after it was remodeled in 1939—where some functions remain today.

Interior Description—Laboratory Building

In plan, the building is organized around enclosed stairs in the center of the building that connect the ground floor, first floor and unfinished attic. The largest space is a work room on the east side of the first floor (Figure 46). A number of original finishes remain on the interior of this floor, including original red and cream basket weave tiles

³ George C. Whipple, "Municipal Water Works Laboratories," *Popular Science Monthly*, December 1900.

on the floors of the two west rooms, painted wood floors in the large east room, four-panel wood doors and casings, and painted plaster walls (Figure 47). The ground floor is more utilitarian and contains concrete floors, painted concrete walls and a painted plaster ceiling. In the center of the east room, a cast iron column with decorative capital continues to support the ceiling (Figure 48). In the west room, the large original storage safe remains.

8. History

Provide a history of the structure, district, site, or object.

The Herron Hill Pumping Station has played a significant role providing water to much of Pittsburgh for more than a century.

The first known attempt to provide a public water supply came in August 1802, just eight years after Pittsburgh was organized as a borough. The burgesses enacted an ordinance to have wells dug and pumps erected throughout the community, which numbered about 1,600 people.⁴ There was also a provision to reimburse private well owners who made their water available to the public. Within a year, the first four public wells had been dug on Market Street.⁵ Prior to this, residents relied on the rivers or springs at the foot of Grant's Hill for water for all household purposes despite complaints that water from the former was dirty and the latter smelled of sulphur.⁶

In 1813 and 1818 proposals were put forth to use steam power to pump water to elevations above the Point to allow for broad distribution of water, but there is no record that either of these projects materialized.⁷ However, the basic concept behind these initial ideas was subsequently enacted and remains valid today. Water gets pumped from the river through pipes to a reservoir on high ground above the most populated areas. From there, gravity is utilized to deliver the water downhill to users.

In 1816 Pittsburgh was incorporated as a city. As the population grew, the system of public and private wells became inadequate. By 1820, with a population over seven thousand, the problem had become acute. People waited in long lines at the wells, returned to hauling water from the rivers by hand, or purchased water from private vendors peddling water from barrels on carts in the street—five water carters are listed in the 1815 city directory.⁸

In 1824, the first concrete steps were taken to develop a general waterworks system when the City approved funds to construct a reservoir with a capacity of one million gallons on the high ground of Grant's Hill at the corner of Fifth Avenue and Grant Street (site of the present-day Frick Building) with a steam-driven pump housed at the corner of Duquesne Way and Cecil Alley to draw water from the Allegheny River (Figure 49). After some construction delays, the reservoir began reliable delivery of water by gravity in 1829. In 1832, a second pump was added to meet increased demand. At this time, Pittsburgh's population had grown to more than twelve thousand people.⁹

Over the next decade, the city outgrew this small system. Development had spread east of Grant Street up into the Hill District and water near the intake at Cecil Alley had become increasingly contaminated (sewage and other waste were routinely disposed of in the rivers). In 1844, a new, larger pumping plant was constructed "above the City."¹⁰ It consisted of a pumping station on the Allegheny River at Eleventh and Etna Streets (at the western end of today's Strip District) and a 7.5 million-gallon reservoir at Prospect Street and Elm Streets (just west of the current Energy Innovation Center on Bedford Avenue in the Lower Hill District). At this time, the plant downtown from the 1820s was abandoned.

⁴ E.E. Lanpher, "A Century of the Pittsburgh Waterworks," *Proceedings of the Engineers' Society of Western Pennsylvania*, 1929, 331; Pittsburgh Water and Sewer Authority, "History of the Pittsburgh Water Supply," <http://www.pgh2o.com/history> (hereafter, PWSA).

⁵ Lanpher, "A Century of the Pittsburgh Waterworks," 332.

⁶ PWSA.

⁷ Lanpher, "A Century of the Pittsburgh Waterworks," 332.

⁸ PWSA; Joel A. Tarr, "Infrastructure and City Building in the 19th and 20th Centuries," in S. P. Hays (ed.), *City at the Point: Essays in the Social History of Pittsburgh* (Pittsburgh: University of Pittsburgh Press, 1989), 222.

⁹ Lanpher, "A Century of the Pittsburgh Waterworks," 332.

¹⁰ *Ibid.*, 333.

In 1847, filtration of the water supply was first recommended. While water was distributed to people's homes and work places, it came directly from the river untreated. It would take six decades to finally remedy this situation.¹¹

In 1848, with the city's population approaching fifty thousand and continuing to expand to the east, the City constructed an additional reservoir with a capacity of 2.7 million gallons at a higher altitude on Bedford Avenue (site of the present Bedford Reservoir Parklet and water tank at the intersection with Ledlie Street). These 1840s projects came to subsequently be known as the Lower and Upper Bedford Basins. Expansion was also a likely reaction to the great fire of 1845, in an attempt to ensure adequate water for emergency uses. By 1850, over twenty-one miles of water pipe had been laid and 6,630 dwellings, factories and shops were being served (Figure 50).¹²

In 1868, the largest annexation in Pittsburgh's history added twenty-one square miles and 35,000 people to the city's East End. The townships of Liberty, Collins, Peoples, Oakland; part of Pitt Township; and Lawrenceville Borough were incorporated as the city was extended to Penn Hills (then Penn Township). This expansion brought expectations for water distribution that could not be met by the supply of available water. As a stop-gap measure, additional pumping units were installed and a temporary pumping station was constructed at 45th Street and the Allegheny River in 1870.¹³

The next year, with the population having increased to over 86 thousand people, the City began a five-decade investment that has resulted in much of the water infrastructure that serves Pittsburgh today. In 1872, construction began on a 125 million-gallon reservoir at the north end of Highland Avenue (Highland Reservoir No. 1), which was put into service in 1879. To provide water, the Brilliant Pumping Station was erected on the south bank of the Allegheny River upstream of Negley Run (where Washington Boulevard meets Allegheny River Boulevard). The steam powered pumping station functioned until 1932 when it was replaced by a smaller electrified pumping station (that building still stands today). A second reservoir was also constructed, but at a lower elevation immediately to the east. However, rapidly evolving water storage technology made this low reservoir obsolete and it was never put into use. It was subsequently converted into Lake Carnegie—a recreational lake for Highland Park.¹⁴

At the same time, with the old intakes and pumping stations being phased out, planning began for the distribution of water from the new Highland Reservoir, first to the Hill District and Downtown, and soon after to the burgeoning East End. To accomplish this, the 12 million-gallon Herron Hill Reservoir was begun in 1872 and completed in 1880 in the Upper Hill District. Water was piped from the Highland Reservoir to what was an earlier iteration of the Herron Hill Pumping Station on the steep northwest corner of the present Herron Hill Pumping Station's lot (Figures 51, 52A, 52B and 53).

Completed in 1880, this first pumping station was designed by architect John U. Barr, Jr. and constructed by Moore & Caughey.¹⁵ Within a year, significant problems with the building and its site emerged. A newspaper account from May 5, 1881 reported that the facility was collapsing, having been built "upon a sliding hillside." The boilers had sunk fourteen inches and the walls were "in such dangerous condition that they should be taken down at once to prevent accident."¹⁶ Nine days later it was reported that the "pumping works had sunk greatly during the past few days and the roof was in great danger of falling in."¹⁷ Over the next few years, the building underwent a series of temporary stabilization interventions as the architect and contractor pointed fingers at the City for selecting an unstable site.¹⁸ In the end, the City decided that the best course of action was to abandon the works and start over.

In 1896, City Council set aside 100 thousand dollars from the sale of bonds for a new Herron Hill Pumping Station lower on the property, closer to Centre Avenue and out of harm's way.¹⁹ Architect William S. Fraser was selected to

¹¹ Ibid.

¹² Tarr, 223.

¹³ Lanpher, "A Century of the Pittsburgh Waterworks," 334.

¹⁴ PWSA.

¹⁵ *The Pittsburgh Daily Post*, 5 May 1881; *The Pittsburgh Daily Post*, 21 October 1879.

¹⁶ *The Pittsburgh Daily Post*, 5 May 1881.

¹⁷ *The Pittsburgh Daily Post*, 14 May 1881.

¹⁸ *The Pittsburgh Daily Post*, 25 June 1880; "The Defective Pumping House," *The Pittsburgh Daily Post*, 5 May 1881.

¹⁹ *The Engineering Record*, v. 34, no. 1, 6 June 1896, 15.

design the new, larger facility and the request for proposals (RFP) was first advertised on February 8, 1896 (Figure 54A).²⁰

A week later, *The Pittsburgh Press* ran a lengthy article detailing Fraser's plans for the new building. Though some minor details were obviously modified as the plans were finalized, the account offers the best description found so far of the look and function of the facility.

Herron Hill Pumping Works—Plans for the New Building to Replace That Now in Use

The department of public works has advertised for bids for the erection of the new pumping house for the water plant at Center and Bellefield Avenues [at that time, Bellefield was the designation for the street on the west edge of the property]. The new plant is to replace the one now in use, and will be erected almost in front of the old building, which is at present inadequate to meet the demands of the patrons of the city supplied from Herron Hill reservoir.

The new building is to be constructed of red stock brick with brown stone trimmings, and will be practically two stories in height. Only one of these stories, however, will be above the street level. The roof will be gabled, steep in pitch and will be covered with slate. Each of the gables will be broken by two artistically designed ventilators.

The building will have a frontage of 150 feet on Center avenue and will extend back along Bellefield Avenue for 125 feet. In the rear of the pump house and adjoining it will be the boiler house. This building will be one story in height and will be constructed after the same design as the pumping house. The interior of both buildings will be wainscoted to a height of five feet and the walls plastered with adamant plastering, which will afterwards be painted.

The immense pumps, which are now being constructed at Milwaukee, will be placed on the first story of the new building, which is below the street level. The steam ends of each of the massive engines will extend through the floor of the building and will occupy almost the entire floor space of the second story (Figures 54B and 54C). In addition to the engines there will be a small work room for the engineers. An areaway will be constructed around the foundations, which will permit those working on the first floor to have plenty of light and ventilation.

The boiler room, which is one story in height, will, when completed, have space enough for four batteries of boilers of 200-horse-power each. It is the intention of Director [of Public Works Edward] Bigelow to only place two of the batteries in at present, as it is claimed that they will be adequate to supply all the steam needed by the two monster engines in the pump house. The boilers are now being constructed by the Edgemoore Iron Company.

The engines which are to be placed in the new building are after the triple expansion pattern, and are now being built by the Edward [P.] Allis company, of Milwaukee. They will be two in number and the pumps with which they will be connected will have a capacity of 5,000,000 gallons each per 24 hours. One of the engines, the larger of the two, will be used to force water to the Herron Hill reservoir, and will be compelled to pump against 130 pounds pressure. It will have a 30-inch stroke. The smaller engine will be used for the Bedford Avenue reservoir, and will have to pump against a pressure of 65 pounds. This engine will have a 30-inch stroke. The contract for both engines was let several months ago, and the manufacturer is under bond to deliver one of the two engines on May 1. The combined cost will be \$51,000.

Supt. [A.B.] Sheppard, of the water department, said yesterday that the new engines when finished would be among the finest used in any water plant in the world. All of the exposed machinery will be of a highly ornamental character, and will be of bright work, which is easily kept clean and always presentable. Although the new plant will be constructed on a much larger scale, the force of employees that will be required to operate the station will not be increased. The station will be under the supervision of a chief engineer who will have two assistants and one man for general work.

²⁰ *The Pittsburgh Press*, 8 February 1896.

The bids will be closed on February 2 [a likely typographical error given the date of the article], and work commenced on one of the buildings as soon as the weather permits.²¹

Work proceeded at a rapid pace and the building was completed by the end of the year, with the date commemorated in the frieze above the front entrance. Concurrent with the construction of the Pumping Station Building, City Council approved the erection of the Herron Hill Laboratory Building directly behind the new Pumping Station Building. An RFP was issued March 18, 1897 and Council approved money for “furnishing and placing cases and fixtures” in the new building in late September of that year—suggesting that the building was essentially complete by the end of 1897.²²

While the Laboratory Building shares many similar architectural details with the Pumping Station Building, evidence has not been discovered to confirm that Fraser was also its architect, though it is highly likely. Unlike the RFP for the Pumping Station Building, which indicates that plans and specifications could be obtained from Fraser’s office, the RFP for the Laboratory Building directs respondents to the Bureau of Water Supply and Distribution. The difference in approach is likely explained by Fraser’s death on April 27, 1897. It is unlikely, one month prior, that he was in any condition to handle the details of a proposal process.

The aforementioned article on “Municipal Water Works Laboratories,” in the December 1900 issue of *Popular Science Monthly* describes the Herron Hill Laboratory Building:

At Pittsburg , . . . the laboratory has been made permanent. The Department of Public Works has erected a two-story brick building, known as the Herron Hill Laboratory. The first floor and basement are used by the Bureau of Water Supply for water analysis, tests of supplies purchased and experimental work upon the filtration of water; the second floor is used by the Bureau of Engineering as a cement laboratory. In the water laboratory the floor and operating-shelves are covered with white tiles and the walls are painted with white enamel, so that the room may be washed from ceiling to floor. Steam from a neighboring boiler house is used for heating the water-baths and for distilling water. The incubators used for bacteriological work are placed in the basement, where the temperature can be kept more constant than on the floors above. The ammonia stills, sterilizers, autoclav and other apparatus are of the most modern type. A safe in the basement serves to protect the records in case of fire. One biologist, one chemist and one attendant are employed in the water laboratory, and a chemist is employed in the department of cement testing. Mr. Wm. R. Copeland is the biologist in charge.²³

With the new Herron Hill Pumping Station in place, water could be pumped to the Herron Hill Reservoir or to the Bedford Basins and then distributed by supply mains to tanks in residential areas in the East End. This became known as the Herron Hill Service.

In 1903, the Highland Reservoir No. 2 (not to be confused with the reservoir that became Lake Carnegie) was put into service. With a capacity of 126 million gallons, it was constructed to serve low-lying sections of the city along both rivers.²⁴

1907 marked the next major milestone in the delivery of water to the city as the first slow sand filtration plant (Ross Station) was completed on the north bank of the Allegheny River across from the Brilliant Pumping Station. By October 1908, additional filters were constructed and all of “peninsular Pittsburgh,” the area between the Allegheny and Monongahela Rivers, was receiving filtered water.

Two major additions were made to the water system with the consolidation of the City of Pittsburgh and the City of Allegheny (Northside) in 1907, and the purchase of the Monongahela Water System (Southside) in 1908. The three previously independent waterworks were merged into a greater city waterworks. The South Side received its first

²¹ *The Pittsburgh Press*, 13 February 1896.

²² *The Pittsburgh Press*, 18 March 1897; *Municipal Record: Proceedings of Common Council of the City of Pittsburgh*, v. 30, no. 13, 27 September 1897.

²³ Whipple.

²⁴ Lanpher, “A Century of the Pittsburgh Waterworks,” 335.

filtered water in February 1909 (fed directly from Highland Reservoir No. 2), and the North Side in March 1914 via the new Aspinwall Station and Lanpher Reservoir in Shaler Township. In 1912, the Mission Street Pumping Station on the Southside was placed into service, replacing an antiquated station at South 29th Street.²⁵

The benefits of filtration and chlorination of the water supply was readily apparent as water-borne illnesses decreased dramatically. For example, in 1907, with a combined population of over 535 thousand people in Pittsburgh and Allegheny, there were 5,652 cases of typhoid fever, 648 of which proved fatal. By 1911, the number of cases had dropped to less than 500 and the number of typhoid fever deaths to fewer than 100.²⁶ By 1930, only four deaths were attributed to typhoid.²⁷

As mentioned, in 1909, published RFPs indicate that the Laboratory Building was significantly remodeled, which included removal of the second floor, though the reason for this has not been determined.²⁸ In 1918, work was approved to convert the fuel source for the Herron Hill Pumping Station Building from gas to oil and to rebuild the brick foundations for the boilers. These projects were completed in early 1919.²⁹ In 1926, initial authorization was made to convert the Herron Hill pumps from steam to electricity, with work completed in 1931.³⁰

From the initiation of filtration in 1907 until the 1950s there was no further chemical treatment performed on the water. Only the addition of chlorine for disinfection and, during periods of acid river water, soda ash to reduce the water acidity prior to filtration.³¹

However, by the mid 1950s, the slow sand filters had aged and became less effective. Alum treatment was then introduced to enhance removal of suspended solids, but that addition could still not keep up with the demand. The requirement to continue to provide satisfactory water pointed to a need for a modern and rapid sand filtration plant.³²

This upgrade to the system was undertaken in two stages. The first stage involved construction of a clarifier pretreatment system, to treat the water before it reached the slow sand filters. This structure, constructed in 1962 just west of Ross Pumping Station, provided for the first time complete chemical treatment for removal of iron, manganese, tastes, odors and colors from the water. The second stage involved replacement of outmoded slow sand filters in 1969 with a dual-media, rapid sand filtration system.³³

In 1984, the present-day Pittsburgh Water and Sewer Authority was created. It absorbed the water department in 1995, and became the sole proprietor of the sewer system in 1999.³⁴

9. Significance

The Herron Hill Pumping Station meets four of the ten Pittsburgh Code of Ordinances criteria for Historic Designation.

Criterion 3. Its exemplification of an architectural type, style or design distinguished by innovation, rarity, uniqueness, or overall quality of design, detail, materials, or craftsmanship.

The Herron Hill Pumping Station is an example of the Classical Revival or Neoclassical style (popular in the Commonwealth from 1895 to 1950) successfully adapted to the specific program of a late nineteenth-century water works. Important from a design standpoint was the desire to provide large quantities of natural light and ventilation into the building along with the ability for the public to confidently view clean modern infrastructure at work inside.

²⁵ PWSA.

²⁶ Ibid.

²⁷ *The Pittsburgh Press*, 23 February 1930.

²⁸ *The Pittsburgh Post-Gazette*, 5 January 1909.

²⁹ *The Pittsburgh Daily Post*, 10 December 1918; *The Pittsburgh Press*, 6 February 1918.

³⁰ *The Pittsburgh Post-Gazette*, 22 August 1931.

³¹ PWSA.

³² Ibid.

³³ Ibid.

³⁴ Ibid.

At this time, many municipalities and their architects turned naturally to the Romanesque Revival style (popular in Pennsylvania from 1840 to 1900) for the literal and symbolic solidity of its massive stone or brick construction and the characteristic round arches that easily lent themselves to large windows. However, William S. Fraser turned instead to Classical precedents that were becoming increasingly popular at the time. In doing so, he created a building that was more stylistically up to date, ideally suited to its prominent grassy plinth above Centre Avenue, and was lighter and airier by virtue of the way he elegantly inserted an abundance of windows into the language of the Classical arcade and entablature.

The Classical Revival style is one of the most commonly seen across Pennsylvania and around the country. It was inspired, in large part, by the World's Columbian Exposition in Chicago in 1893 (just three years before Fraser's commission for the Pumping Station), which promoted a renewed interest in Classical architectural forms. Similar to the Colonial Revival style which was popular during the same period, the Classical Revival style was more formal and monumental in its design. Relying on stylistic details of the earlier Greek Revival style, Classical Revival style buildings often have massive columns and/or pilasters with Doric, Corinthian or Ionic capitals, topped by a front facing pediment. One of the most distinctive versions of this style features a full height columned front porch topped with a classical pediment. The arrangement of windows and doors is formal and symmetrical, with the front door often flanked by pilasters or side lights and capped with a flat entablature, broken pediment or rounded fanlight. The Classical Revival style is less ornate than the Beaux Arts style which was also popular in the 1885 to 1930 period and employs similar classical details.³⁵

The Classical Revival style, with its impressive Greek temple-like form, was most often used for civic buildings such as courthouses and schools, along with banks, churches and mansions. It was never quite as popular as the Colonial Revival style for more common residential buildings. The prominent architectural firm of McKim, Meade and White designed many buildings in this style across the nation in the early years of the twentieth century. Examples of this style can be found in many Pennsylvania communities, often in the form of public buildings. One of the most outstanding examples of this style is the imposing Philadelphia Museum of Art, completed in 1928 and designed by prominent Philadelphia architects Horace Trumbauer and Julian Abele, and the firm of Zantzinger, Borie and Medary. Trumbauer and Abele also designed the nearby Philadelphia Free Library Central Building in this style in 1927. The Classical Revival style was chosen for both of these prominent buildings along the newly laid out Fairmount Parkway, a grand boulevard designed to convey a sense of the city's cultural aspirations.³⁶

In Pittsburgh, examples of the style include First Congregational Church, Oakland (now Saint Nicholas Greek Orthodox Cathedral, 1904, 419 South Dithridge Street in Oakland, designed by Thomas Hannah—a draftsman in Fraser's office at the time of his death); the former First Church of Christ, Scientist (1904, 635 Clyde Street in Shadyside, designed by Chicago architect Solon Spencer Beman); and the earliest portion of the South Side High School (1897, 900 East Carson Street, designed by Edward Stotz). See Figures 55, 56 and 57.

Character-defining features of the Classical Revival style that are present on the Herron Hill Pumping Station include the formal symmetrical design, full height Classical pilasters supporting an entablature; the front-facing gable/pediment; and dentiled cornice.

³⁵ Pennsylvania Historical & Museum Commission, "Pennsylvania Architectural Field Guide: Classical Revival Style, 1895-1950, www.phmc.state.pa.us/portal/communities/architecture/styles/classical-revival.html.

³⁶ Ibid.

Criterion 4. Its identification as the work of an architect, designer, engineer, or builder whose individual work is significant in the history or development of the City of Pittsburgh, the State of Pennsylvania, the Mid-Atlantic region, or the United States.

The Herron Hill Pumping Station is significant as a skillfully-designed, surviving example of the work of late nineteenth-century Pittsburgh architect William Smith Fraser (1852 – April 27, 1897; Figure 58).³⁷ Fraser’s career was short but illustrious and his architectural output considerable and varied. In a span of only eighteen years, he earned numerous important commissions, was repeatedly published in national and international illustrated architectural journals, and became one of the most highly sought-after designers of his generation in the city. It is only his premature death from cancer at age forty-four, before his career could peak, that has kept him from being studied more by architectural historians and being better known to the general public.

Prologue

W.S. Fraser (as he was known in most published accounts per nineteenth century convention) was born in 1852 in Wellsville, Ohio. Around age eighteen, he “began his professional training in the offices of various New York architects, pursuing certain courses of study at the Cooper Institute during the same time.”³⁸ He then “went to England and became a pupil of William Burges, studying likewise at the Royal Academy Architectural School, and spending time on the Continent, sketching and measuring.”³⁹

No details have been found describing Fraser’s tutelage under William Burges (1827-1881). However, J. Mordaunt Crook, the foremost biographer of Burges, describes an architectural office that regularly hired pupils to work alongside the master and his handful of long-term associates.⁴⁰ Among the greatest of the Victorian art-architects, Burges sought in his work to escape from both nineteenth-century industrialization and Neoclassical architectural style and re-establish the architectural and social values of a utopian medieval England. Scholars have tended to see Burges resolutely stuck in thirteenth-century France for his inspiration with little tolerance for designs other than French Gothic. However, more recent research, like that by Crook, paints a portrait of a more inquisitive, playful, creative designer who drew on a number of sources, including the arts of the Middle Ages, the Islamic world and East Asia and who was “able to turn his hand to almost anything; from cathedrals in Brisbane, an art school for Bombay, a chimney piece for Lord Charrington, to miscellaneous furniture, lecterns, candelabra, pulpits, goblets and even bishops’ mitres.”⁴¹

While Fraser was clearly schooled in the Gothic Revival, as seen from his early measured drawings of French cathedrals, he would establish an architectural practice in Pittsburgh in 1879 that became adept at working in a multitude of styles—both traditional and contemporary. He would also demonstrate an ability, not unlike that of Burges, to adapt these designs to a variety of building types, including some of Pittsburgh’s earliest skyscrapers and fire-proof buildings, churches, residences and utilitarian structures like warehouses and the Herron Hill Pumping Station. As *The American Architect and Building News*, affirmed: “Those who recall the designs executed by Mr. Fraser . . . will appreciate how thoroughly he was imbued with Burges’s love for thirteenth-century Gothic, and how skillfully he modified it to meet the conditions of our time and civilization.”⁴²

³⁷ Most accounts indicate Fraser’s birth year as 1852. His marriage license indicates July 1852 (with the day illegible). His obituary in *The Pittsburgh Bulletin* (1 May 1897) lists this year as does his obituary in *The American Architect and Building News*, which also indicates his birth day as July 19. The 1880 US Census appears to confirm this, listing Fraser’s age as 27 (the enumeration date of June 1, 1880 being a month or two shy of his twenty-eighth birthday). However, the official registration of his April 27, 1897 death lists his age as 42 (suggesting he was born in 1854).

³⁸ *The American Architect and Building News*, “Obituary,” v. 56, no. 1115 (8 May 1897), 42.

³⁹ *Ibid.*

⁴⁰ L. Mordaunt Crook, *William Burges and the High Victorian Dream* (Chicago: The University of Chicago Press, 1981), 80.

⁴¹ “Study Guide: Gothic Revival,” Victoria and Albert Museum, <http://www.vam.ac.uk/content/articles/s/style-guide-gothic-revival/>; “William Burgess (1827-1881) – Thinkpiece,” *The Architectural Review*, <https://www.architectural-review.com/essays/william-burgess-1827-1881/10016439.article>

⁴² *The American Architect and Building News*, “Obituary.”

Major Works and Professional Activities

Commercial / Manufacturing

1882

Warehouses for Arbuckles & Co., Pittsburgh

The September 9, 1882 edition of *The American Architect and Building News* shows Fraser's six-story commercial office building at 808 Liberty Avenue Downtown and an eight-story warehouse to the rear on Strawberry Way that were part of brothers John and Charles Arbuckle's wholesale grocery business (Figure 67). In 1868, their company became the first to prepackage roasted coffee. Today, a two-story building from the late-1930s occupies the site. However, four bas-relief stone sculptures from the original building have been incorporated into the rear wall (Figures 69, 70 and 71A).⁴³

1884

Standard Oil Company Office Building, Pittsburgh

This commission marked the beginning of a long and profitable patronage under petroleum pioneer Charles Lockhart. Lockhart had built the first commercial scale oil refinery in Pittsburgh in 1861 and in 1872 teamed with John D. Rockefeller, Henry M. Flagler, and William G. Warden to start the South Improvement Co., which subsequently became the Standard Oil Company.⁴⁴ He was also actively involved in the United Presbyterian Church, especially at Sixth United Presbyterian Church, where he and W.S. Fraser were both members. Fraser's Standard Oil Company Building was located on the southeast corner of Duquesne Way (present Fort Duquesne Boulevard) and Eighth Street Downtown. A rendering of the building published in the August 8, 1885 edition of *The American Architect and Building News* (Figure 72) shows a three-and-one-half-story building that was decidedly Romanesque Revival in style with round-arched openings, deeply-set windows, heavy brick walls, carved stone details, ornate cushion capitals, and steeply pitched hipped roof clad in slate. The building stood into the mid twentieth-century; today the lot is occupied by Goodyear Auto Service.

1886

Pittsburgh Daily Post Building, Pittsburgh

Located on the southwest corner of Wood Street and Virgin Alley (present-day Oliver Avenue), the five-story building was characterized in the *Post* as being "of the modern style of architecture" with pressed brick walls and stone facings with a cornice stone reading "Post Building" and "1886" (Figure 76).⁴⁵ Today, the site is occupied by the north wing of One PNC Tower.

1888

National Bank of Commerce Building, Pittsburgh

Located on the southeast corner of Wood Street and Sixth Avenue, the National Bank of Commerce Building was one of Pittsburgh's first skyscrapers and first large-scale fire-proof buildings (Figures 82 and 83). The October 29 edition of *The Philadelphia Real Estate Record and Builders' Guide* reported that "The new bank building to be erected by the National Bank of Commerce will be eight stories high, or about 131 feet. It will have a frontage of 74 feet on Wood Street, and 60 feet on Sixth Ave. The style of architecture will be French Gothic. The front will be of granite [from the Hallowell quarries in Maine]."⁴⁶ Sanborn Fire Insurance Company maps and newspaper accounts indicate that Fraser designed a steel frame commercial tower with "beams, columns and girders of iron, covered with terra cotta" in order to be "as near fireproof as possible."⁴⁷ One of only six fireproof buildings in the city (determined by analyzing 1893 Sanborn fire insurance maps), Fraser's design was testament to his ongoing concern for public safety and illustrates his application of the latest construction techniques to a building type in which he had not previously worked. The world's first steel skeleton skyscraper, the Home Insurance Building in Chicago, had only been completed three years earlier in 1885. The National Bank of Commerce Building, which later became

⁴³ Rick Sebak, "Pittsburgh was the Coffee Capital of America!" *Pittsburgh Magazine*, 29 April 2010.

⁴⁴ Alfred N. Mann, "Some Petroleum Pioneers of Pittsburgh," extended draft for *Western Pennsylvania History Magazine*, Summer 2009; Ida M. Tarbell, *The History of the Standard Oil Company* (New York: McClure, Phillips & Co., 1905).

⁴⁵ *The Pittsburgh Daily Post*, 4 October 1886.

⁴⁶ *The Philadelphia Real Estate Record and Builders' Guide*, v. 3, no. 43 (21 October 1888).

⁴⁷ *The Pittsburgh Dispatch*, 19 December 1889.

the Home Trust Building and then the Grogan Building, was torn down in 1966. Today, the site is home to the K & L Gates Building, which was completed in 1966.⁴⁸

Keystone Bank, Pittsburgh

In 1889, Fraser designed a new building for the Keystone Bank at what was then 108 Fourth Avenue, between Wood and Smithfield Streets. A photograph shows a narrow French Gothic building with a front-facing gabled dormer and clustered columns defining the openings on all three floors (Figure 103). The building was constructed of “granite, three stories high, and contain[ing] all modern improvements.”⁴⁹ It survived until 1902, when it was demolished for a much larger Keystone Bank tower designed by MacClure and Spahr, which opened in 1903. Today, that building is the Pittsburgh Technology Center at 322 Fourth Avenue.

1891

Arbuthnot-Stephenson Building, Pittsburgh

Located on the northeast corner of Penn Avenue and Eighth Street downtown, the eight-story, 140-foot tall Arbuthnot-Stephenson Building was hailed as “the tallest mercantile building in the city” and “Pittsburgh’s first skyscraper,” even though Fraser’s previous National Bank of Commerce rivaled it at 131 feet in height.⁵⁰ In August of 1890, *The Pittsburgh Dispatch* featured a drawing of the building under the headline “How Pittsburgh is Progressing Architecturally” (Figure 112), and included the following description:

Eight magnificent stories will accommodate 93,000 feet of floor space for the great drygoods traffic conducted by Messrs. Arbuthnot, Stephenson and & Co. The frontage on Penn avenue will extend 90 feet, and 115 on Eighth street. The architecture, designed by W. S. Fraser, places the building among the foremost in the city. Beaver Valley stone, the finest used in Pittsburg, will form the piers and walls of the lower floors, while brick with stone trimmings will be employed on the rest of the building. Three immense arches on the fifth floor of the Penn Avenue side and nine on the eighth floor will give the edifice an imposing appearance. The main entrance on Penn avenue opens directly into the store room. The great number of windows make the Arbuthnot unequalled for lighting facilities.⁵¹

The article concluded by stating that “the building will be fireproof,” again illustrating Fraser’s commitment to life safety and utilization of the most up-to-date construction methods. Historic photographs from 1908 and 1915 show a building in transition stylistically (Figures 113 and 114). From the fifth-floor arches upward, Fraser had designed a somewhat expected Romanesque Revival commercial block. However, the impressive expanses of glass on the first four stories—from floor-to-ceiling and pier-to-pier—indicate a much more modern and innovative approach not found before in Fraser’s portfolio. While similar in scale and massing to the National Bank of Commerce, the Arbuthnot-Stephenson Building marks a clear departure and demonstrates Fraser’s ability to skillfully abandon precedents and manipulate new building techniques. Around 1961, the building was demolished for a three-story building for Commercial Bank and Trust Company, which later became home to the Pittsburgh Opera from 1998 to 2008, before being demolished around 2010.⁵²

1892

Gensenleiter Livery, Pittsburgh

In April, *The Pittsburgh Post-Gazette* reported that Edward Gensenleiter’s new livery at 6-12 Eighth Street had just been completed. Fraser is credited with its design in an 1895 description of his firm in *History and Commerce of*

⁴⁸ In his essay, “The Romanesque Revival in Pittsburgh” (Journal of the Society of Architectural Historians, Vol. 16, No. 3, Romanesque Issue, Oct., 1957, 22-29), James D. Van Trump arguably describes the Commerce Bank/Grogan Building as Romanesque. It is not known if the French Gothic description in *The Philadelphia Real Estate Record* came from Fraser. In the same essay, Van Trump attributes the design to Struthers and Hannah (who both worked for Fraser), but no other documentation of their involvement has been found, while much exists to credit Fraser. It is possible that Van Trump’s misattribution stems from a notice in the May 1904 edition of *Ohio Architect and Builder*, that does indicate that Struthers and Hannah were hired “for altering of the former Commercial National Bank Building at 316 Fourth Avenue”—a wholly different building.

⁴⁹ *The Philadelphia Real Estate Record and Builders' Guide*, v. 4, no. 14 (10 April 1889); *The Pittsburgh Dispatch*, 16 July 1889.

⁵⁰ *The Inland Architect and News Record*, v. 25, no. 2 (March 1890); *The Philadelphia Real Estate Record and Builders' Guide*, v. 5, no. 9 (5 March 1890); *The Pittsburgh Press*, 8 March 1938.

⁵¹ *The Pittsburgh Dispatch*, 16 August 1890.

⁵² Pittsburgh Opera, *News Release*, 11 October 2007.

Pittsburgh and Environs. The *Post Gazette* article stated that the building exemplified “advanced ideas in the care of equines” and that this new “home for horses. . .is evidence of Pittsburgh’s recent and comparatively rapid advancement in the manner of strictly new and modern building, coupled with exterior effects of architectural beauty.” At five stories it was touted as “the largest livery, sale and boarding emporium for horses in Western Pennsylvania.” The three-bay wide building was constructed of brick with cast iron details on the front façade.⁵³ A plan of the building can be seen in the 1893 Sanborn Fire Insurance map shown in Figure 107; historic photographs can be seen in Figures 121 and 122). The building was demolished sometime in the late twentieth century.⁵⁴ Today the site is a parking lot.

Standard Manufacturing Plant, Pittsburgh

In 1892, Fraser designed a new plant for Standard Manufacturing in the Ninth Ward of Allegheny City, just south of Western State Penitentiary (Figure 130).⁵⁵ While an explicit account of Fraser having designed the new facility has not yet been found, an 1895 description of his firm in *History and Commerce of Pittsburgh and Environs* credits him with the design. Construction on the ten-acre site at 551-583 Preble Avenue advanced quickly. An advertisement from 1897 shows a rendering of the facility (Figure 131), with a caption that indicates it is “The largest plant in the world devoted exclusively to the manufacture of porcelain enameled baths and plumbing goods.”⁵⁶ Today, nothing remains of the plant; the site is occupied by the Duquesne Light Woods Run facility on what is now Beaver Avenue.

1893

Joseph Horne & Company, Store and Office, Pittsburgh

Building on his success with the design of the Bank of Commerce and the Arbuthnot-Stephenson Building, Fraser received a major commission in 1892 to design a new downtown store and office for Joseph Horne & Company. Located on Penn Avenue between Fifth and Sixth Streets, the store would be “a six-story structure of brick, stone and steel, 120 feet front by 180 deep, and a rear building in addition 120 by 20 feet deep. . .The first story is to be 22 feet 8 inches from floor to ceiling and the other stories 16 feet and 14 feet. . .The total cost is to be \$305,000.”⁵⁷ Founder Joseph Horne, who had opened his first dry goods establishment in 1849, died suddenly on October 19, 1892 and did not live to see his flagship store completed.

The new store opened to the public at the end of July 1893. It featured 150,000 square feet of floor space and thirty-eight different merchandising departments (Figure 127). *The Pittsburgh Press* lauded the design stating that “the inspection by the public was not a tedious one, for the structure, with its story piled upon story, is a model in its arrangement for the convenience of patrons. In fact, ease and comfort for the public while shopping was one of the main points [*sic.*] kept in view while planning the new place of business.”

Fraser designed a modern Commercial Style building with a state-of-the-art retail plan with the only hints of earlier architectural precedents being seen in the rusticated Romanesque first story and arched entrances. More importantly, as he had done with the Bank of Commerce and the Arbuthnot-Stephenson Building, he had incorporated the very latest fire-proof technology. This would be severely tested four years later in May 1897 when a massive fire causing three million dollars in damage spread from the Thomas H. Jenkins wholesale grocery establishment across the street on Penn Avenue to engulf the Horne’s department store and adjacent Horne’s office building (also designed by Fraser and opened within a year of the store; Figure 128). While historic photographs show both Horne’s buildings completely gutted, Fraser’s design allowed both buildings to quickly be rebuilt (Figure 129).

Fraser’s design was studied intensely by engineers and insurance underwriters and became an important case study in the design of fire-resistant buildings. The major engineering and design journals of day, such as *Engineering News* and *Architecture and Building*, published extensive analyses. Writing in *The Brickbuilder*, Peter B. Wright declared that “. . .the Horne Department Store is of steel skeleton construction throughout, and is the first building of that kind ever tested by an actual fire which permeated every part of its interior. . . This gigantic test is a vindication of the main features of the system. . .Everything combustible in the department store had been consumed. . .The

⁵³ *The Pittsburgh Post-Gazette*, 12 April 1892.

⁵⁴ *The Pittsburgh Post-Gazette*, 5 November 1936.

⁵⁵ *The Pittsburgh Dispatch*, 24 July 1892.

⁵⁶ *City of Allegheny, Pa.: History and Institutions—Illustrations and Sketches of the Banking, Wholesale and Manufacturing Interests and the Representative Professional Interests of Allegheny County* (Allegheny: Evening Record, 1897), 22.

⁵⁷ *The Pittsburgh Daily Post*, 9 August 1892.

triumph of fire-proofing with fire-clay has been reached in the Horne Department Store, in the simple fact that it has saved the steel skeleton. . . The predictions of croakers who claimed that buildings all of steel would be warped out of shape when protected by the modern systems of light-weight fire-proofing have not been verified.”⁵⁸ Within a year, William H. Birkmire dedicated a twenty-six-page chapter to Fraser’s design and the Horne’s fire in the first edition of his book *The Planning and Construction of High Office-Buildings*. It would be included in at least three subsequent editions published for more than a decade.”⁵⁹

1894

Farmers Bank, Indiana, PA

This Romanesque Revival bank was located immediately east of the Indiana County courthouse on Philadelphia Street (Figures 125 and 126). In 1924, the bank moved to new location and sometime in the middle of the twentieth century the building was demolished. Upon its opening, *The Indiana Democrat* described the building as follows: “The plans and specifications of the new building were made by Architect W.S. Fraser, of Pittsburg, and reflect credit on his good taste and ability. The architectural design of the building is of the composite order, with a tendency to the roman order, is three stories in height, and is built of the best light-colored vitrified brick, with Indiana County sandstone trimmings, and presents a beautiful and harmonious appearance, the brick work and stone work harmonize well.”⁶⁰

1896

Lockhart Building, Pittsburgh

In October and November 1895, a number of sources reported that Fraser’s plans for a six-story, fireproof business building for Charles Lockhart were complete.⁶¹ Located on the south side of Penn Avenue just east of Ninth Street, the building remains today and contains first floor retail with apartments above; the address is 908-10 Penn Avenue (Figures 142 and 143). The building is Classical Revival in style and is clad in orange Pompeiian brick.⁶² While the first-floor retail spaces have been modified over the years, the upper stories retain integrity. Windows are delineated by classical pilasters and a large cornice contains modillions and dentils. The June 27, 1896 edition of *The Metal Worker* indicated that Rasner & Dinger “are now engaged on contract for the copper cornice, skylights and roofing for the Lockhart Building.”⁶³ The building is a contributing resource in the Penn-Liberty National Register historic district and in the locally-designated Penn-Liberty district.

Institutional / Academic

1879

New Insane Department for the Guardians of the Poor, Pittsburgh

Located at the city poor farm on the Southside; later subsumed by the Carnegie Steel Company’s Homestead Steel Works in 1892 (Figure 62).⁶⁴ Today, the site is the parking lot for the Lowe’s store in Munhall.

1880

Public School House, Wellsville, Ohio

A published drawing and photographs show a large, symmetrical, three-story, red-brick building with four projecting wings and a 120-foot tower modeled after the Palazzo Vecchio in Florence (Figures 64 and 65).⁶⁵ *The Saturday Review* of East Liverpool, hailed it as “the model school house of Eastern Ohio” and praised their “talented

⁵⁸ Peter B. Wright, “The Recent Fire at Pittsburgh: A Real Test on a Great Scale of Fire Resisting Construction and Material, *The Brickbuilder*, v. 6, no. 6 (June 1897), 117-23.

⁵⁹ William H. Birkmire, *The Planning and Construction of High Office-Buildings*, 4th ed. (New York: John Wiley & Sons: 1906), 161-87

⁶⁰ *The Indiana Democrat*, 5 April 1894.

⁶¹ *The Pittsburgh Daily Post*, 18 October 1895; *Electricity: A Popular Electrical Journal*, v. 9, no. 18 (13 November 1895), 246; *The Philadelphia Real Estate Record and Builders' Guide*, v. 10, no. 45 (6 November 1895).

⁶² *Pennsylvania Historic Resource Survey Form*, completed by Pittsburgh History & Landmarks Foundation, 20 March 1980.

⁶³ *The Metal Worker* (June 27, 1896), 39-40.

⁶⁴ *The Pittsburgh Daily Post*, June 17, July 1 and August 23, 1879.

⁶⁵ *The American Architect and Building News*, 12 June 1880. *The Saturday Review* of East Liverpool, Ohio identifies the builder as “Contractor McCoy” (7 August 1880).

young townsman” for both his adherence to historical precedents and his ability to adapt them. The school was demolished in 1955.

1886

Design for The Carnegie Library of Allegheny, Allegheny City (unbuilt)

Fraser was one of eighteen architects to compete for the nation’s first Carnegie Library.⁶⁶ While Smithmeyer and Pelz’s Romanesque Revival design ultimately received unanimous approval on January 10, 1887, it was Fraser’s refined design—which he described as “early French-Gothic with an Early English feeling”—that captivated the professional press, who reproduced and discussed it at length, both domestically and internationally—a considerable coup and affirmation of Fraser’s talents.⁶⁷ The editors of *The American Architect and Building News* made the unprecedented decision to feature Fraser’s submission in their next possible issue, with no mention of Smithmeyer & Pelz, stating: “We adopt the very unusual course of devoting all the illustrations of this issue to a single design—and that, too, not the successful one.”⁶⁸ Their coverage of Fraser’s design included a detail of a dormer followed by three 2-page spreads featuring plans, perspectives, elevations and additional details—nine drawings in total (Figures 77-80). The German architectural and building trade journal, *Centralblatt der Bauverwaltung*, featured the Allegheny Library competition in their December 10, 1887 edition and had considerable praise for Fraser, calling him an excellent talent with an independent concept and concluding that his artistic design equaled if not surpassed that of the winning firm (Figure 81). Notably, they published four drawings by Fraser but only two by Smithmeyer & Pelz. The French architectural journal, *Le Moniteur des Architectes*, also carried favorable coverage of Fraser’s design for the library, stating that Fraser had been the main competitor of Smithmeyer & Pelz and that his “plans were no less remarkable.”⁶⁹

1891

Design for Carnegie Library of Pittsburgh (unbuilt)

Ninety-six architects, including W.S. Fraser, submitted designs for the new Carnegie Library to be built in Oakland at the entrance to Schenley Park.⁷⁰ In January 1892, the Renaissance Revival design of Longfellow, Alden and Harlow was announced as the winner. However, the Gothic Revival submission from Fraser was one of six premiated (i.e. award-winning) designs to earn two thousand dollars each.⁷¹ As he did for the Carnegie Library competition in Allegheny, Fraser submitted a refined French Gothic design. It featured an interior courtyard behind a massive central tower. While *The Inland Architect and News Record* responded quickly to news of the competition by publishing the winning design in their January 1892 issue, they only showed the perspective drawing by Longfellow, Alden and Harlow.⁷² Two months later, when they illustrated Fraser’s design they included five of his drawings (front elevation, perspective view, main entrance and first and second floor plans; Figures 115 and 116).⁷³ Attesting to the global reach of Fraser’s entry, his drawings were also published in *Australasian Builders’ and Contractors’ News* headquartered in Sydney, Australia.⁷⁴

1892

Sharpsburg YMCA, Sharpsburg, PA

In February 24, 1892, *The Philadelphia Real Estate Record and Builders’ Guide* announced that a new YMCA building designed by Fraser would be erected in Sharpsburg. The Romanesque Revival building, which was completed in November of that year, still stands but has been modified considerably. A postcard from 1914 shows a

⁶⁶ “Allegheny Library,” *The Pittsburgh Post-Gazette*, 31 May 1886; “The Plans Opened,” *The Pittsburgh Post-Gazette*, 7 December 1886.

⁶⁷ “The Carnegie Library: Plans of the Building Adopted Yesterday,” *The Pittsburgh Daily Post*, 11 January 1887; *The American Architect and Building News*, v. 21, no. 581 (12 February 1887): 80.”

⁶⁸ *The American Architect and Building News*, v. 21, no. 581 (12 February 1887): 80. The phrase *comme dessins* here means “as drawings.”

⁶⁹ *Bibliothèque de Pittsburg*,” *Le Moniteur des Architectes*, v. 2, A. Levy, ed., 1888.

⁷⁰ *The Pittsburgh Dispatch*, 21 April 1891; *The Inland Architect and News Record*, v. 19, no. 2 (March 1892); *The Pittsburgh Press*, 12 November 1891.

⁷¹ *The Pittsburgh Dispatch*, 8 January 1892.

⁷² *The Inland Architect and News Record*, v. 18, no. 6 (January 1892).

⁷³ *The Inland Architect and News Record*, v. 19, no. 2 (March 1892).

⁷⁴ Reported in Philip John Kent, *The Meaning of the Romanesque Revival: A Study of Romanesque Revival Architecture and its Associations in Britain, the United States, and Australia*, Ph.D. dissertation (Bryn Mawr: Bryn Mawr College: 1993), 54.

simple Romanesque design with a two-story addition to the west (Figure 119). Today the building is the Linden Gymnasium (Figure 120).

1894

Model School and Silas M. Clark Hall, Indiana, PA

In November 1893, the trustees of the State Normal School in Indiana (present Indiana University of Pennsylvania) announced that they had settled on the sites for two campus buildings: a new building for the Model School (Figure 136), where future teachers could practice their craft in structured classrooms with actual students, and a new boys' dormitory, to be named Silas M. Clark Hall (Figure 137) with plans by W.S. Fraser, architect of the recently constructed Farmers Bank Building in Indiana.⁷⁵ Unfortunately, the budget Fraser was provided did not permit the dormitory to be of fire-proof construction. It was destroyed in a blaze in November 1905. The Model School still stands and is today known as Wilson Hall.⁷⁶ In the design of these buildings, Fraser's first definitive expression of Classical Revival formalism can be seen. The main facades of the boys' dormitory and side facades of the Model School strongly anticipate his design for the front façade of the Herron Hill Pumping Station with their slightly projecting center bays, triangular pediments and Classical detailing.

1895

New Bethlehem Public School, New Bethlehem, PA

On November 28, 1894, *The Philadelphia Real Estate Record and Builders' Guide* announced that W.S. Fraser was "the architect for a new school building to be erected at New Bethlehem" in Clarion County. Completed the next year, the school appears from a historic postcard to have been similar to the Model School at Indiana in size and architectural details (Figure 139). The building no longer exists.

1897

Greensburg High School, Greensburg, PA

In January 1896, *The Punxsatawney News* announced that Fraser had been selected to design the new Greensburg High School, to be constructed of stone and brick, measure 155 x 110 feet and cost \$55,000.⁷⁷ Fraser completed his drawings within months so that "the magnificent temple of education" could be completed by the start of school in September 1897.⁷⁸ The three-story building was Gothic Revival in style, and featured a 70-foot central tower flanked by front-facing cross gables with large pointed arch windows at the top floor (Figure 144). A major feature was the auditorium on the third floor, which had a seating capacity of 1,150 people and "was the largest auditorium in the county."⁷⁹ The school was demolished in the mid-twentieth century (perhaps around 1927 when the current Greensburg Salem Middle School was constructed on the lot to the south). Today, the site of Fraser's school is a grass athletic field for the middle school.

Religious

Fraser had a number of commissions that allowed him to combine his religious faith with his architectural skills. He was a devout Presbyterian and member of the board of directors of the YMCA of Pittsburgh.⁸⁰ The relationships he developed within the religious community, especially among Pittsburgh's East End Presbyterians, would account for many of his works.

1884

*Freedman's Mission School, Norfolk, Virginia.*⁸¹

⁷⁵ *The Indiana Weekly Messenger*, 29 November 1893.

⁷⁶ *Indiana University of Pennsylvania: Preservation Plan* (Pittsburgh: Pittsburgh History & Landmarks Foundation, 2009).

⁷⁷ *The Punxsatawney News*, 8 January 1896; *The Inland Architect and News Record*, v. 7 no. 1 (February 1896).

⁷⁸ *History of Greensburg and Greensburg Schools* (Greensburg: Vogle & Winsheimer, 1899), 148-54.

⁷⁹ *The History of Greensburg, 1799-1949* (Greensburg: Westmoreland County Historical Society, 1949).

⁸⁰ *The Pittsburgh Post-Gazette*, 15 May 1897.

⁸¹ "Report of the Board of Freedmen's Missions," *Minutes of the Twenty-Sixth General Assembly of the United Presbyterian Church of North America—Appendix*, May 28-June 4, 1884, v. 6, no. 1, 72.

1886

*Freedman's Mission Teacher's Home, Norfolk, Virginia.*⁸²

1889

Design for the Cathedral of Saint John the Divine, New York (unbuilt)

In January 1889, sixty-eight architects, including Fraser, responded to the design competition for the Cathedral of Saint John the Divine. In May, four finalists were announced.⁸³ Though Fraser did not advance, his decidedly Gothic design was featured prominently in the professional press. Throughout 1889 and 1890, *The American Architect and Building News* featured the entries of twenty-one of the competitors. Fraser's perspective drawing, east elevation and plan were published in the October 5, 1889 edition (Figures 91-93). The editors subsequently assembled these selected entries into a portfolio that featured fifty-seven plates on 14 x 20-inch paper, which they published repeatedly over the next decade.

1893

Hamilton Avenue United Presbyterian Church, Pittsburgh

In January 1893, *The Inland Architect and News Record* reported that W.S. Fraser had under construction "a frame church, size 68 by 54 feet; slate roof; cost \$6,000."⁸⁴ The church, located on the northwest corner of Hamilton Avenue and Lang Street in Homewood (across from the current Homewood Library), had been "organized in 1886 as the Dallas Mission or Branch of the Sixth United Presbyterian Church in Pittsburgh."⁸⁵ At some point after 1923 (determined from G.M. Hopkins Company maps), Fraser's frame building was clad in brick, but the form and massing are still visible (Figures 132 and 133). Today, the Nazarene Baptist Church occupies the building.

1894

Eastminster Presbyterian Church, Pittsburgh

In April 1892, *The Pittsburgh Press* announced that Fraser's home church, Sixth United Presbyterian (today, Eastminster Presbyterian Church), was planning to erect a new building and that Charles Lockhart had initiated the fundraising with a donation of \$50,000.⁸⁶ The new church would be built at the southeast corner of North Highland Avenue and Station Street (across from the present East Liberty Home Depot). The cornerstone was laid in September 1893 and the building dedicated on December 30, 1894 (Figure 134).⁸⁷

In an article covering the dedication, *The Pittsburgh Press* described the church as follows:

The new building is one of the handsomest in this part of the state. The structure was designed by Architect W.S. Frazer [*sic.*]. The design is after the early French Gothic style, which is carried out with fidelity to every detail of the building with pure effect, care being taken to have it representative of the style. The structure is built of buff Amherst stone, and the main tower is of stone up to the copper gutters, while the fleche at the intersection is all copper, with hammered ornamental work. The porch, or rather the cloister, connecting the Sunday school room with the main, or church building, is of stone with tile floors, as are also the floors of the vestibules and logias [*sic.*].⁸⁸

Fraser's design was received favorably in the architectural press. In March 1894, *The American Architect and Building News* published his perspective drawing and floor plan (Figure 135).⁸⁹

⁸² "Report of the Board of Freedmen's Missions," *Minutes of the Twenty-Eighth General Assembly of the United Presbyterian Church of North America—Appendix*, May 6-June 2, 1886, v. 6, no. 3, 473.

⁸³ Donald G. Presa and Jay Shockley, *Cathedral of St. John the Divine and the Cathedral Close: Designation Report*, New York City Landmarks Preservation Commission, 21 February 2017, 8.

⁸⁴ *The Inland Architect and News Record*, v. 20, no. 6 (January 1893).

⁸⁵ Homewood United Presbyterian Church Records, 1891-1914.

⁸⁶ *The Pittsburgh Press*, 15 April 1892.

⁸⁷ *The Pittsburgh Press*, 15 September 1893; *The Pittsburgh Press*, 23 December 1894.

⁸⁸ *The Pittsburgh Press*, 23 December 1894.

⁸⁹ *The American Architect and Building News*, v. 43, no. 953 (31 March 1894).

Residential

1885

Residence of H.L. Richmond, Esq., Jr., Meadville, PA

Fraser's first known residential commission was for a prominent attorney and former mayor of Meadville.

Constructed on Diamond Park Square in the center of town, the two-and-one-half story brick house was designed in the Queen Anne style. The June 6, 1885 edition of *The American Architect and Building News* shows a house with a steeply pitched hipped roof with lower cross gables, asymmetrical facades, a wrap-around front porch, turned wooden porch posts, a cutaway bay window, second-story porches, and decorative half-timbering in the front gable (Figure 74). The house still stands today, though it has lost some of its details (Figure 75).

1888

Oak Hill, for James McKay, Esq., Pittsburgh

In March, *The American Architect and Building News* published Fraser's design for a grand mansion known as "Oak Hill."⁹⁰ The house stood on a five-acre lot at the north end of Amberson Avenue in Shadyside on a hillside that extended to Centre Avenue above the Shadyside Station of the Pennsylvania Railroad (Figures 87 and 88). McKay was founder of the James McKay Company, a manufacturer of metal chains and was also active in the early oil and gas industry in Pittsburgh. The house stood until the early 1950s, when Amberson Towers and Gardens were built.⁹¹

House for Dr. T.A. Rex, Pittsburgh

In June 1888, *The Pittsburgh Daily Post* reported that a building permit had been issued for a house for Dr. T.A. Rex to be built on the northeast corner of Neville Street and Ellsworth Avenue at a cost of \$12,000.⁹² Shortly thereafter, *The Philadelphia Real Estate Record and Builders' Guide* offered that it would be in the Queen Anne style and that the stone would come from the Kerper quarry at Chestnut Hill in Philadelphia (Figure 89). The house later became the rectory for the Church of the Ascension. Today, the triangular lot where the Rex house stood is the south lawn of the church.

House for Moses Atwood, Esq., Allegheny City

In July, *The American Architect and Building News* published Fraser's design for a large residence at 946 Ridge Avenue near the intersection of Ridge and Allegheny Avenues (Figure 90).⁹³ The two-and-one-half story stone house was designed in the Queen Anne style. As shown in Fraser's drawing, it had a steeply pitched hipped roof with lower cross gables, a corner tower, asymmetrical facades, a full-width front porch, paired wooden porch posts, decorative gables and large corbeled chimneys. Today, the site is the parking lot for a Subway restaurant.

1889

Dinwiddie Street Townhouses, Pittsburgh

The Philadelphia Real Estate Record and Builders' Guide reported in their March 20 edition that "Mr. Charles Lockhart has purchased twenty-eight lots on Dinwiddie Street, each 21-1/4 by 100 feet. The consideration was \$37,000, upon these lots Mr. Lockhart purposes to erect about fifty modern dwellings, containing nine and eleven rooms, and modern conveniences. The material used will be brick and stone. . . The operation will cost about \$250,000."⁹⁴ Today, the dozen houses that survive in the block between Colwell and Reed Streets in the Crawford-Roberts/Lower Hill neighborhood are being rehabilitated by the Rothschild Doyno Collaborative, Trek Development and Mistick Construction and the empty lots in between are getting new compatible infill housing (Figures 94, 95 and 96).

Residence for John A. Renshaw, Pittsburgh

On December 25, *The Philadelphia Real Estate Record and Builders' Guide* reported that "W.S. Fraser, architect. . . has furnished the plans for a 3-story brick and frame residence for John A. Renshaw, to be erected on

⁹⁰ *The American Architect and Building News*, v. 23, no. 639 (24 March 1888).

⁹¹ *The Pittsburgh Post-Gazette*, 7 September 1949.

⁹² *The Pittsburgh Daily Post*, 13 June 1888. Attribution to Fraser comes from a description of Fraser's firm in *History and Commerce of Pittsburgh and Environs* (see below).

⁹³ *The American Architect and Building News*, v. 24, no. 657 (28 July 1888).

⁹⁴ *The Philadelphia Real Estate Record and Builders' Guide*, v. 4, no. 11 (20 March 1889).

Ellsworth Avenue, at a cost of \$10,000.”⁹⁵ It is believed that Renshaw, head of the wholesale grocery firm of John A. Renshaw & Co. and one of the founders of Shadyside Presbyterian Church, had the house constructed next door to his home for his daughter, Mary Bailey Renshaw who had married Richard E. Chislett in 1880 (Figure 100). The house at 5131 Ellsworth Avenue survives today and retains many of its original Queen Anne details (Figure 101).

1890

Albert J. Barr House, Pittsburgh

In August, Albert J. Barr, manager of *The Daily Post*, obtained a permit to “build a three-story stone house on Bidwell Street, Twentieth Ward, cost \$31,000” per the design of W.S. Fraser.⁹⁶ Bidwell is now Devonshire Street in Shadyside. The address at the time was 809 Devonshire. In 1927, William Larimer Jones, Jr., of Jones & Laughlin Steel had the house razed and constructed the current brick and stone late-Gothic-Revival house (now 803 Devonshire).⁹⁷

1891

William S. Fraser House, Pittsburgh

In July 1891, Fraser obtained a building permit for the new Shingle Style house he had designed for himself at 5655 Stanton Avenue in Highland Park. Fraser had planned this house with his wedding in mind. On December 17, 1891, he married Ella May Elkins, the daughter of George W. Elkins, president of the Pittsburgh Traction Company. The ceremony took place at the Sixth United Presbyterian Church. The house remains today (Figures 117 and 118).

1896

Edward L. Dawes House, New Brighton, PA

In June 1896, *The Philadelphia Real Estate Record and Builders' Guide* reported that “At New Brighton, Beaver County, Mr. [Edward L.] Dawes of the firm of Dawes & Myler, will erect a handsome residence from plans prepared by W.S. Fraser, architect, of Pittsburg, Pa. It will be Colonial in design, of handsome interior finish, and be provided with all modern conveniences. The estimated cost is \$12,000.”⁹⁸ The two-story, brick house, which still stands, was designed with a symmetrical, three-bay wide front façade with curved two-story bay windows flanking the entrance. A front porch with Classical columns extends across the front of the house, the center bay of which projects in a graceful arc toward the street (Figures 146 and 147). The house was subsequently gifted to the Home for the Aged and Infirm. Today, Dawes Manor, with its recently renovated residential wings that flank the original house, continues to provide housing to seniors in New Brighton.⁹⁹

1897

Residence for William Hill, Esq., Carnegie, PA

In December 1896, it was reported that “At Carnegie, Allegheny Co., William Hill, Esq., will erect a handsome Colonial dwelling, to cost about \$10,000, from plans prepared by W.S. Fraser, Eighth Street, Pittsburgh.”¹⁰⁰ While the William Hill House at 846 Washington Avenue no longer remains, a photo from c. 1960 shows what some call a Free Classic Queen Anne style house, or a Queen Anne with Classical Revival details (Figure 148).¹⁰¹ The frame house was two-and-one-half stories tall, with a steeply-pitched hipped roof and lower, front-facing cross gable. A classified advertisement from 1930 indicated that the property was a “modern center hall house with fourteen rooms and three baths.”

⁹⁵ *The Philadelphia Real Estate Record and Builders' Guide*, v. 4, no. 51 (25 December 1889).

⁹⁶ *The Pittsburgh Dispatch*, 13 August 1890; also reported in *The Philadelphia Real Estate Record and Builders' Guide*, v. 5, no. 33 (20 August 1890) and *The Inland Architect and News Record*, v. 16, no. 2 (September 1890).

⁹⁷ *The Pittsburgh Press*, 5 September 1927.

⁹⁸ *The Philadelphia Real Estate Record and Builders' Guide*, v. 1, no. 26 (24 June 1896). Similar announcements were published in *The American Architect and Building News* (1 August 1896) and *The Brickbuilder* (July 1896).

⁹⁹ *Book of Biographies: Biographical Sketches of Leading Citizens of Beaver County, Pennsylvania* (Buffalo: Biographical Publishing Company, 1899); “Home is Donated,” *The Pittsburgh Post-Gazette*, 29 November 1912; “Tub Trust Head Marries Typist,” *The Time-Democrat* (New Orleans), 217 December 1912; *The Book of Prominent Pennsylvanians* (Pittsburgh: Leader Publishing Co., 1913); Obituary, *The Pittsburgh Sun-Telegraph*, 20 November 1944.

¹⁰⁰ *The Philadelphia Real Estate Record and Builders' Guide*, v. 11, no. 53 (30 December 1896).

¹⁰¹ *The Pittsburgh Press*, 14 January 1930.

Lockhart-McCune Mansion, Pittsburgh

In May 1895, Fraser had completed plans “for a three-story stone dwelling to be erected on Fifth Avenue for Chas. Lockhart. Cost about \$38,000.”¹⁰² Lockhart was having the Chateausque Style house built as a gift for his daughter, Janet Walker Lockhart, who the year before had married John R. McCune, III. By November, the Lockhart-McCune House was under construction and *The Pittsburgh Daily Post* ran a lengthy article detailing the features it would have under the heading, “A Magnificent East End Home: The Slightly Combination of Grandeur, Elegance and Beauty” (Figures 140, 141A and 141B). The house was described as

. . .an accurate reproduction, barring necessary adaptations to modern conveniences, of the style in vogue during the height of the French Renaissance. . .The house has the dimensions of 95 and 78 feet, the latter extension including a kitchen "L," a severely modern acquisition. The building is two stories high, with an abnormally elevated roof; the latter is given additional prominence by the sharp pitch of its sides. The material of construction, is red sandstone from Lake Superior; the roof is covered with slate of a corresponding shade of red. . .The house faces Fifth Avenue. Looked at from that street, the cynosure of every eye will be the portico, which might even be called a colonnade; running along for more than the middle third of the house. On top is a balustrade. . .In front, the porch has four columns, 16 inches square, fluted, with Doric moldings. . .On the left of the porch is a two-story bay. . .On the roof are two gables or pediments of Gothic form, highly ornamented with carved figures. . .”¹⁰³

In January 1897, *The Pittsburgh Press* reported that the “palatial stone residence” was complete, that A. & S. Wilson had been the contractor, and that estimated cost, with furnishings, was \$500,000.¹⁰⁴ The house, which was one of many mansions on Pittsburgh’s Millionaire Row, was demolished in 1961.¹⁰⁵

Professional Advocacy and Education

In 1888, *The Southern Insurance Directory* published a paper that Fraser had delivered to a group of fire underwriters in Pittsburgh. In the paper, he explains the best way to “construct our most fire-resisting buildings” and provides considerable detail about materials and construction techniques for all major components.¹⁰⁶ Fraser’s approach and careful attention to detail proved invaluable a decade later when the Joseph Horne department store and office buildings survived a major fire and his work became a national case study.

In 1889, Fraser publicly advocated for the architecture profession when he signed a petition published in *The American Architect and Building News* under the heading “A General Protest Against Improper Conditions of Competition,” protesting new rules proposed by the Commonwealth of Massachusetts that would relinquish ownership of drawings from finalists to the state and not guarantee that the selected competitor would actually be hired to execute the design. He was one of 230 architects to sign from 18 states, the District of Columbia and Canada. He was the only architect from Pittsburgh.¹⁰⁷

Fraser’s advocacy carried into 1890 as a debate was growing nationally over whether architects should be licensed in order to practice. In July, *The Pittsburgh Dispatch* interviewed Fraser on the topic and he replied, “The architect who is called upon to design a large structure frequently has over 100 lives in his hands. He should necessarily possess an adequate knowledge of construction, and in order to insure safety he should be compelled to pass a thorough examination in the principles of the profession. The lives of the people are imperiled by dangerous buildings put up by unskilled architects.”¹⁰⁸

¹⁰² *The Philadelphia Real Estate Record and Builders' Guide*, v. 10, no. 21 (22 May 1895). A nearly identical announcement ran in *The Inland Architect and News Record*, v. 25, no. 4 (May 1895).

¹⁰³ *The Pittsburgh Daily Post*, 19 November 1895.

¹⁰⁴ *The Pittsburgh Press*, 30 January 1897.

¹⁰⁵ *The Pittsburgh Press*, 13 August 1961.

¹⁰⁶ W.S. Fraser, “Building—Fire Resisting,” *The Southern Insurance Directory*, Second Annual Issue (New Orleans: Brown & Janvier), 315.

¹⁰⁷ *The American Architect and Building News*, v. 25, no. 682 (19 January 1889).

¹⁰⁸ *The Pittsburgh Dispatch*, 24 July 1890.

Fraser's advancement of the architecture profession can again be seen in March of 1891 when the Western Pennsylvania Chapter of the American Institute of Architects was founded in Pittsburgh. He was one of twelve inaugural members and remained a member until his death. The name of the organization was changed to the Pittsburgh Chapter in 1896.¹⁰⁹ In May 1898, within a year of his death, the chapter hosted its first exhibition of architectural drawings.

In January 1894, Fraser's advocacy for the rights of architects was struck a legal blow when he lost an initial hearing in the United States Circuit Court for the Western District of Pennsylvania. In his suit, he had asserted that architects Culver & Hudson of Williamsport, Pennsylvania, had infringed upon his copyright and adopted his unbuilt design for the Carnegie Library in Allegheny (Figure 78) for a new city hall erected in Williamsport (Figure 138). The judge argued that publication of Fraser's drawings in the architectural press was not the same as a copyright of the designs themselves.¹¹⁰ In a final hearing in October 1895, the judge reaffirmed that architects' plans are not protected. The judge dismissed the case, saying that when the design was printed in *The American Architect and Building News* it was given to the public.¹¹¹ A comparison of Fraser's drawings for the Allegheny library and the completed Williamsport City Hall immediately demonstrates the cause for Fraser's concern. The completed building is nearly identical, with some modification to fenestration and the number of bays, apparently because the city hall did not require quite as large a building.

Patents

Fraser spent 1890 working on a different type of drawing—one that wasn't architectural. In April, he filed drawings and specifications for a patent to shade electric lights. It had four moveable petals, resembling those of a flower, that could be opened or closed around the light bulb to vary the intensity of illumination (Figure 108).¹¹² In 1891, he obtained a second patent. This one was for an automatic brake for streetcars "designed to be thrown into gear by the backward or forward motion of the car to automatically apply the brakes, holding them at any desired degree of tension, while they be instantly released before starting the car" (Figure 109). A month later, *Scientific American* featured Fraser's invention and included a detailed perspective drawing by one of their artists showing the proposed brake and undercarriage of a streetcar (Figure 110).¹¹³ These initiatives help demonstrate that Fraser, like his mentor William Burges, worked on a wide range of creative projects outside of formal architecture.

Civic Infrastructure

1896

Herron Hill Pumping, Pittsburgh

In February 1896, what is believed to be Fraser's first government commission was announced with publication of the RFP on behalf of the City of Pittsburgh for the erection of the Herron Hill Pumping Station (Figure 54A). While the timeframe suggests his hiring sometime in 1895, no documentation has yet been found to indicate when he started.¹¹⁴ The building was completed in late 1896.

Epilogue

William S. Fraser died on the morning of April 27, 1897 at his home on Stanton Avenue. By most accounts he was only forty-four years old. His death certificate indicates that the cause of death was sarcomatous tumor of the abdomen (a malignant form of soft tissue cancer).¹¹⁵ The duration of illness is listed as nine months, meaning he was beginning to get ill around the time he was designing the Dawes House in New Brighton, if not sooner. He does not

¹⁰⁹ *Proceedings of the Twenty-Seventh Annual Convention of the American Institute of Architects* (Chicago: Inland Architect Press, 1893); *The Inland Architect and News Record*, v. 27, no. 5 (June 1896).

¹¹⁰ *The Pittsburgh Press*, 30 January 1894.

¹¹¹ "Protection of Architects' Plans," *The Real Estate and Building Journal*, 23 May 1896.

¹¹² United States Patent Office records.

¹¹³ "An Automatic Car Brake," *Scientific American*, v. 64, no. 24 (13 June 1891); United States Patent Office records.

¹¹⁴ *The Pittsburgh Press*, 14 February 1896.

¹¹⁵ *Registration of Deaths in the City of Pittsburgh, State of Pennsylvania, A.D. 1897*; *The Pittsburgh Press*, 21 April 1897.

appear to have taken on any new plans in 1897, and had likely relied heavily on his staff of draftsmen to carry out projects from the time his symptoms first appeared. On April 29, he was interred in the Homewood Cemetery columbarium.

The only known photograph of Fraser accompanies his obituary in the May 1, 1897 edition of *The Pittsburg Bulletin* (Figure 58).¹¹⁶ While this account of Fraser's life is invaluable for its image of him, it contains a number of errors. For example, it indicates that he designed the Carnegie Library in Oakland and was survived by a daughter, rather than a son. Other obituaries were more accurate, including a number that were published in national architectural journals. *The Inland Architect and News Record* hailed Fraser as "one of the foremost architects of the city" and "one of the leading members of his profession in western Pennsylvania." He was described as "a man whose social as well as his exceptional mental and professional traits rendered him among the most popular and successful residents of Pittsburg. . . His taste, originality and skill find embodiment in some of the finest business houses, private residences and churches hereabouts."¹¹⁷ His passing was also covered in *The American Architect and Building News*, *The Brickbuilder*, and *The California Architect and Building News*.¹¹⁸

Fraser was survived by his wife, Ella May Elkins, and a son, Harold Thornton Elkins. Tragically, the couple's only child died at the age of thirteen on the evening of August 3, 1906 at the home of his grandmother, Mrs. George W. Elkins, on Highland Avenue.¹¹⁹

Two of Fraser's draftsmen took over his firm after his death: Fraser's nephew, William F. Struthers, and Thomas Hannah. The first known appearance of their new firm name, Struthers & Hannah, was in the June 1897 edition of *The Brickbuilder*. The rapid transition, within two months of Fraser's death, suggests that Fraser had developed a succession plan.

Thomas Hannah (c. 1867-1935), appears to have had the longer and more successful career of the two partners. Among his best-known buildings are the Andrew Carnegie Free Library (1899) in Carnegie, First Congregational Church, Oakland (1904; now St. Nicholas Greek Orthodox Cathedral), the Keenan Building (1907) on Liberty Avenue, with its distinctive red dome, and the Western Pennsylvania Seminary dormitory (1911-12) on Ridge Avenue (now West Hall on the campus of the Community College of Allegheny County).¹²⁰

One final note of clarification: There is a W. S. Fraser cited repeatedly as having collaborated with Henry Hornbostel on the design for Congregation B'Nai Israel at 327 North Negley Avenue, which was completed in 1923. Walter Kidney cites him, as does Frank Toker, and a Pittsburgh History & Landmarks Foundation plaque. Clearly this is not the same Fraser as the subject of this account. The W.S. Fraser documented here died in 1897 and Hornbostel didn't start working in Pittsburgh until 1904. Additional research will be needed to clarify if Hornbostel had a confederate named Fraser, or if this is a misattribution.

Conclusion

William Smith Fraser was an important architect in late-nineteenth century Pittsburgh. He was a skillful and creative designer who created dozens of significant buildings and worked for many of the most influential patrons in the city. He designed corporate headquarters, where his buildings represented the success and security of not just local companies, but companies with regional and national impact. He placed near the top in a number of important national design competitions and was highly regarded and regularly published in the national architectural press.

In an age when most architects received their education through apprenticeships or through architectural or engineering programs at local universities, Fraser received a formal education abroad at London's Royal Academy, a school perhaps bested at the time only by the Ecole des Beaux Arts in Paris. Significant also, was his study under

¹¹⁶ *The Pittsburg Bulletin*, v. 34, no. 26 (1 May 1897).

¹¹⁷ *The Inland Architect and News Record*, v. 29, no. 4 (May 1897), 39.

¹¹⁸ *The American Architect and Building News*, v. 56, no. 1115 (8 May 1897), 42; *The Brickbuilder*, v. 6, no. 5 (May 1897), 90; *The California Architect and Building News*, v. 18, no. 6 (June 1897), 67.

¹¹⁹ *The Pittsburgh Press*, 4 August 1906; *The Pittsburgh Daily Post*, 4 August 1906. The 1900 U.S. Census lists the birthdate for Harold Fraser as April 1895, which would have made him eleven at the time of his death.

¹²⁰ Albert M. Tannler, "First Presbyterian Church, Edgewood," *PHLF News*, no. 173 (December 2007), 19.

master art-architect William Burges. Like Burges, Fraser was inquisitive and able to work skillfully outside the bounds of pure architecture—as seen in his two patents—and also outside the confines of Gothic Revival precedents.

Fraser also demonstrated success in his short career at navigating the changing role of the professional architect. The multitude of architectural styles and building typologies in which he worked suggests a start as a generalist in the craft-oriented tradition of master builder. However, increasingly complex projects like steel-frame fireproof buildings and a water pumping station demonstrate a shift in roles to that of project manager, where the implementation of his vision would have been assisted by a team of specialized consultants. Furthermore, he helped to define this changing role of the architect through numerous forms of advocacy for the profession and the public in their care, including his involvement at the start of Pittsburgh's chapter of the American Institute of Architects.

Fraser is known to have completed designs for at least fifty-nine architectural projects. The number of actual buildings known to have been designed approaches one hundred fifty, when multi-structure projects are considered, such as the fifty townhouses on Dinwiddie Street and the plant for the Standard Manufacturing Company. Stylistically, while clearly fond of thirteenth-century French Gothic designs, he proved to be adept at working in many different motifs. Among his portfolio of fifty-nine projects where a specific style was clearly evident, only nine projects were Gothic Revival in style, tied with the number of Queen Anne designs. These are followed closely by Commercial (8), Classical Revival (6), Romanesque Revival (4), Shingle Style (1) and Chateausque (1). His design for the Arbuthnot-Stephenson Building perhaps shows his most advanced gesture stylistically, where the wide expanses of glass extending up the building's lower floors was clearly looking forward and demonstrating Modern principles.

Of his fifty-nine projects, forty-three are known to have been constructed, with another eight presumed to have been completed based on the existence of a building permit and/or named contractor. The most common typology among the projects known to have been built is residential (21 projects), followed closely by commercial (16), then educational (8), religious (5), institutional (5), and infrastructure (3). Of his built projects, only thirteen are extant (representing two dozen buildings). Three of these projects are severely compromised in integrity: Sharpsburg YMCA, Hamilton Avenue U.P. Church, and the townhouses on Dinwiddie Street (where only a dozen of the original fifty buildings survive).

While most of Fraser's work was executed in the Pittsburgh area, he was not hesitant to pursue competitions that attracted the country's top architects, regardless of the project's location, as demonstrated by his competition entry for the Cathedral of Saint John the Divine in New York City and his entries for the Carnegie Libraries in Allegheny and Pittsburgh.

Fraser's reputation was also not provincial. Throughout his short career, thirteen of his designs were published in the national architectural press, including at least three designs that were published and/or reviewed by journals overseas. Additionally, two measured drawings were printed in the pages of national journals. This accounting does not include the many instances where his designs were reported, often in great detail, in local newspapers, and where images of his buildings were published locally in books, magazines and newspapers.

Two factors have kept Fraser from being better known and possibly even being considered a master by today's architectural historians. First, and most obvious, is the age at which he died. Succumbing to cancer at the relatively young age of forty-four severely limited his creative output. He simply did not live long enough to amass a body of work large enough to attract serious subsequent academic study, despite the amount of attention he received from patrons and the press while he was alive. Historians remark on the brevity of the career of his mentor, William Burges. But Burges, who died at age 53, managed to outlive Fraser by almost a decade.

Second, is when Fraser lived. From the standpoint of his legacy, Fraser had the misfortune of working during the last two decades of the nineteenth century. This was a time when cities, especially industrial and financial powerhouses like Pittsburgh, were undergoing profound transformation of their urban landscapes at a scale never before seen. Fraser largely worked in low-rise Pittsburgh, a city whose buildings were only a handful of stories high. Much of that city would soon be replaced by the steel-framed towers of the late-nineteenth and early-twentieth centuries—including by some of his own design, like the National Bank of Commerce and the Arbuthnot-Stephenson Building. Many of those that survived this first redrawing of the landscape would not outlive its second,

as the city redefined itself during its renaissance of the 1950s and 1960s. The only building of Fraser's to survive downtown is the Lockhart Building on Penn Avenue.

Fortunately, his more suburban work fared slightly better. In Pittsburgh, extant buildings include the Herron Hill Pumping Station Building in Oakland; the Renshaw-Chislett House and the houses at 512 and 518 Shady Avenue in Shadyside; Fraser's own house in Highland Park; Eastminster Presbyterian Church in East Liberty; a dozen of the fifty townhouses on Dinwiddie Street (though fairly altered); and the Hamilton Avenue United Presbyterian Church in Homewood (very altered). Surviving outside Pittsburgh are the H.L. Richmond, Jr. House in Meadville; the Edward L. Dawes House in New Brighton; the Model School at what is now Indiana University of Pennsylvania; and the Sharpsburg YMCA (very altered).

The time during which Fraser practiced has also impacted the level of awareness that exists about his patrons. While he worked for some of the richest and most powerful people and companies in the city, they have largely been eclipsed by the generation of Pittsburghers to follow them in the early years of the twentieth century. For example, few people are likely to remember the impact Charles Lockhart had shaping early industrial Pittsburgh, or to realize that Pittsburgh was once home to the Arbuckle brothers, the leading coffee manufacturers in the country.

Outside of architecture, Fraser left a legacy of decades of service to the United Presbyterian Church—which could fill a volume on its own. Professionally, his legacy was carried on through the draftsmen he mentored and in the subsequent work of Struthers & Hannah. Though Fraser's career was short, it was impactful and demonstrated a significant level of skill as a designer, entrepreneur and advocate for the profession.

Criterion 5. Its exemplification of important planning and urban design techniques distinguished by innovation, rarity, uniqueness, or overall quality of design or detail.

The Herron Hill Pumping Station is significant for its role in dependably providing public water to Pittsburgh's notoriously hilly neighborhoods for over a century and for allowing rapid urban development of the city's East End in the early twentieth-century.

Securing an adequate water supply for the nation's towns and cities has been a major preoccupation of local officials since the beginning of the American urban experience. Fire protection, public health, bathing, washing, cooking and sewerage are all dependent on the distribution of one of nature's most abundant—yet most precious—resources. "Without it, cities simply could not exist," wrote Nelson M. Blake in *Water for the Cities*, a history of urban water supply problems in the United States.¹²¹ Like many cities throughout the country in the nineteenth century, Pittsburgh faced the problem of constructing a public waterworks. As the population grew, wells, springs, river water and small initial reservoirs proved to be inadequate or became polluted.

It was not until the second half of the nineteenth century that municipal authorities recognized that, if they wished their towns and cities to grow and prosper under the impact of urbanization and industrialization, a dependable public water supply was an absolute necessity. Public health, fire protection, personal comfort, and the needs of industry all dictated good quality water be available to the community. In response to this demand, the number of public water systems grew from 136 to 3,196 between 1860 and 1890. By 1923, ninety-seven percent of the country's urban population was served by public water systems.¹²² Throughout the last century, with the rise of the environmental movement and concerns about the impact of global warming, the quality and quantity of the nation's water has remained a constant matter of public attention. The Herron Hill Pumping Station helps illustrate how one American city supplied its inhabitants with reliable water.

Following the largest annexation of surrounding communities into the City of Pittsburgh in 1868, long-term infrastructure improvements were implemented. Key among these was construction of the water distribution network known as the Herron Hill Service, where water is piped from the Highland Reservoir No. 1 to the Herron Hill Pumping Station and then pumped up to the Herron Hill Reservoir through 1,250 feet of 12-inch water main.

¹²¹ Nelson M. Blake cited in James W. Sheire, "Shreveport Waterworks, Pump Station," National Register nomination.

¹²² *Ibid.*

Located on one of the highest hills in the city with an elevation of 1,261 feet, the reservoir then provides water primarily by gravity to residential neighborhoods on four lower hilltops: Herron Hill, Squirrel Hill, Garfield Hill and Heberton Hill, with a range of elevations from approximately 1,000 to 1,230 feet (see distribution map and diagram, Figures 149 and 150). Summarizing a century of successful water delivery, Managing Engineer of the Pittsburgh Bureau of Water, Erwin E. Lanpher, indicated in 1930, that these four communities totaled over 100 thousand people, or more than 15 percent of the city's population and represented some of the fastest growing, most desirable residential neighborhoods in the city.¹²³

Numerous accounts link the growth of Squirrel Hill directly to the development of the Herron Hill Service. While the advent of electric trolleys in 1893 and construction of the Boulevard of the Allies in 1923 are often cited and, admittedly, played significant roles, it is the presence of reliable water that ultimately made the neighborhood a desirable destination worthy of investment. In a 1911 article titled "History of Pittsburgh Water Supply" in the journal *Fire and Water Engineering*, author L.C. MacPherson discussed the challenges of Pittsburgh's topography and the significance of water being carried directly from the Herron Hill Reservoir "across the lowlands to supply the Squirrel Hill District." A 1927 article in *The Pittsburgh Press* featuring a photograph of the Herron Hill Pumping Station, explained the distribution process, and discussed the importance of the facility to "the tremendous growth in population of Squirrel Hill" (Figure 151).¹²⁴ In 1929, Erwin E. Lanpher concluded in *A Century of the Pittsburgh Waterworks* that "the rapid development of the Squirrel Hill section forced the building of a new and larger Herron Hill pumping station at the corner of Center [*sic.*] Avenue and Dithridge Street."¹²⁵ In 1930, a new pump was installed specifically to "increase the water pressure in Squirrel Hill" and shortly thereafter, when the facility was electrified, newspaper accounts cite part of the impetus for the upgrade as the need to "maintain sufficient pressure to supply water for the Squirrel Hill district."¹²⁶

The Herron Hill Pumping Station is an extant, working, historic resource that helps interpret the establishment of the municipal waterworks in Pittsburgh—the single largest expenditure made by the city during its first century. "The initial cost of construction constituted 40 percent of all municipal spending from 1827 to 1833. The expansion in the 1840s increased the size of expenditures, and in 1854 the Water Committee estimated the total cost of the water system as \$677,709. . . . Pittsburgh was not unusual in the extent to which waterworks costs constituted a substantial part of the total municipal budget. The building of New York's Croton Aqueduct in 1842, for instance, increased the city's debt from \$500,000 to over \$9 million and caused many citizens to predict financial disaster."¹²⁷

Additionally, the Pumping Station is significant for illustrating advances in technology at a typical late nineteenth-century American waterworks. The Pumping Station shows the evolution from steam power—first coal- then oil-fired—followed by electrification. With the addition of water filtration to the system in 1907, the Herron Hill Service played a pivotal role in reducing water-borne illness in the city.

Lastly, the Herron Hill Laboratory Building is significant as a historic site that encouraged the application of rigorous scientific standards to urban design and planning projects. Civil engineer and sanitary microbiologist George C. Whipple helps establish historic context and significance for water analysis facilities like those in the Laboratory Building in the previously mentioned *Popular Science Monthly* article "Municipal Water-Works Laboratories:"

The laboratory idea is fast taking hold of our municipalities. It is the natural result of modern science and American practicality. More and more our civilization is making use of the great forces of nature, and more and more is it becoming necessary that nature's laws should be understood: hence the need for the precise data of the expert and the long-continued observations of the specialist. This is emphatically true in the domain of sanitary science, where the advances in chemistry, microscopy and bacteriology have wrought revolutionary changes. The microscope is no longer a toy, it is a tool; the microscopic world is no longer a world apart, it is vitally connected with our own. The acceptance of the germ-theory of disease has placed new responsibilities upon health authorities and has at the same time indicated the measures necessary to be

¹²³ Erwin E. Lanpher, *City of Pittsburgh, Pennsylvania: Its Water Works*, 1930, 18.

¹²⁴ *The Pittsburgh Press*, 18 Sep 1927.

¹²⁵ Lanpher, "A Century of the Pittsburgh Waterworks," 335.

¹²⁶ *The Pittsburgh Press*, 14 August 1930; "Big New Pump Put in Operation," *The Pittsburgh Post-Gazette*, 22 August 1931.

¹²⁷ Tarr, 223.

taken for the protection of the public health. With the knowledge that certain diseases are caused by living organisms and that these may be transmitted by drinking-water has come the need of careful supervision of public water supplies, which has resulted in the establishment of many laboratories devoted to water analysis.

The work of supplying water to a community is . . . an engineering problem. . . . Accordingly, there has been developed in this country during the last decade an interesting group of water-works laboratories devoted to sanitary supervision and to experiments upon water purification.¹²⁸

The paving analysis functions in the Laboratory Building were also significant. A 1916 Public Works report indicates that

The [Herron Hill] Laboratory is well equipped with facilities for making both chemical and physical tests of various materials. The mechanical installation includes a 300,000-pound Universal machine for tensile and compression tests; a standard brick rattler; a complete equipment for the physical testing of rubber materials; ductility and penetration machines for asphalt, and other equipment and apparatus.

At this laboratory not only these materials used by the Department of Public Works are inspected and tested, but also materials purchased and used by other bureaus and departments. Among the materials which are tested in the ordinary course of business of the laboratory, are the following: Portland cement, paving and sewer brick, refined asphalt and flux, asphalt wearing surface (samples taken from pavements being laid under contract), wood block, creosote oil, water-proofing materials, bridge timber, concrete, sand, gravel, coal, soap, lubricating oil, brass, bearing metal, fire, street and filtration hose, and other materials. Tests are made to determine not only the physical and chemical qualities of the materials, but also to determine the value for payment.

Research work is also carried on by the Laboratory and some interesting experiments and research work have been done upon paving materials, particularly relating to asphalt and wood block. Data and information regarding materials for the preparation of specifications are also supplied to the various bureaus and departments. A valuable feature of the laboratory is in the records which are kept showing the life and relative good or poor qualities of materials used in construction work, particularly those used in street paving and wearing surface. These records show the analyses of materials used and their performance during a term of years. Tests are made at the laboratory and where necessary, as in the case of wood block treatment, at the point of origin.¹²⁹

The Herron Hill Pumping Station, consisting of the Pumping Station Building and Laboratory Building, represent important examples of late nineteenth-century municipal commitment to providing state-of-the-art technological and scientific advancements to the community. The fact that both buildings retain integrity and, most importantly, the fact that the Pump House continues to serve its original function after more than a century of service, supports the argument for local historic designation and the enhanced preservation planning that comes with it. It is important to ensure that these significant examples of civic infrastructure can continue to serve the residents of Pittsburgh.

Criterion 10. Its unique location and distinctive physical appearance or presence representing an established and familiar visual feature of a neighborhood, community, or the City of Pittsburgh.

The Herron Hill Pumping Station is significant for a number of reasons as a visual landmark in North Oakland, a neighborhood that is undergoing a considerable amount of new development. First, it is important aesthetically for the historic composition of its site. Fraser placed his Classical Revival building appropriately upon a pedestal. The grassy knoll from which the building rises not only adds to its prominence, but would have offered sweeping views of the East End and the much of the Herron Hill Service area when first constructed. He created a site that is both ordered and unordered, with winding walkways and paved driveways to the south and a forested hillside rising to the

¹²⁸ George C. Whipple, "Municipal Water Works Laboratories," *Popular Science Monthly*, December 1900.

¹²⁹ Department of Public Works, City of Pittsburgh, "The City of Pittsburgh and Its Public Works," 1916.

north. More than a decade after his death, the property was noted for its landscaping, which was planted with Cannas, Geraniums and Coleus.¹³⁰

Second, the Herron Hill Pumping Station is important visually for its scale and the era represented by that scale. At the time it was constructed, the two-story building would have been the largest structure for a block or two in any direction. Subsequent construction in the neighborhood during the early part of the twentieth century brought some larger apartment buildings, but on the whole, the neighborhood remained one of largely of low-rise construction into the twenty-first century. Construction of the One on Centre apartment building across the street from the Pumping Station radically altered the compatible scale of buildings in neighborhood and resulted in the loss of five c. 1890 houses on Centre along with a duplex on North Dithridge.

10. Integrity

Both the Herron Hill Pumping Station Building and the Herron Hill Laboratory Building meet the criteria for integrity as it applies to location, design, materials, and workmanship.

Location: The Herron Hill Pumping Station Building and the Herron Hill Laboratory Building both retain integrity in regard to location. They both remain in their original locations, from which the Pumping Station has pumped water to the Herron Hill Reservoir since 1896 and the Laboratory advanced the scientific basis for water and paving analysis for more than half a century.

Design: The buildings retain integrity in regard to design. Both retain their form, massing, method of construction, and general plan. The Pumping Station Building, in particular retains character-defining features that allow its significance as an example of the Classical Revival style to be conveyed. These include its symmetrical design, full height pilasters, front facing pediment, dentiled cornice, arcaded window openings and encircling entablature. While the infill of the windows is a loss, this does not keep the style and function of the building from being understood.

Materials: The buildings retain integrity in regard to materials. They retain their coursed sandstone foundations, brick walls, decorative pilaster capitals with egg-and-dart ornament, stone sills and lintels, and carved stone frieze containing the building's name and date of construction.

Workmanship: The buildings retain integrity in regard to workmanship. The exterior masonry details reflect a high level of skill and care that has allowed the walls to stand with little signs of unwanted movement or the need for repointing.

¹³⁰ *Annual Report of the Bureau of Parks* (Pittsburgh: Department of Public Works, 1910), 21.

Herron Hill Pumping Station
Historic Nomination Form
Bibliography

Alfred N. Mann, "Some Petroleum Pioneers of Pittsburgh," extended draft for Western Pennsylvania History Magazine, Summer 2009; Ida M. Tarbell, *The History of the Standard Oil Company* (New York: McClure, Phillips & Co., 1905).

"Alteration to Herron Hill Pumping Station for Use as Bureau of Tests Laboratory," Construction Drawings, City of Pittsburgh Department of Public Works, October 1939.

The American Architect and Building News, "Obituary," v. 56, no. 1115 (8 May 1897), 42.

Bibliothèque de Pittsburg," *Le Moniteur des Architectes*, v. 2, A. Levy, ed., 1888.

"Big New Pump Put in Operation," *The Pittsburgh Post-Gazette*, 22 August 1931.

City of Allegheny, Pa.: History and Institutions—Illustrations and Sketches of the Banking, Wholesale and Manufacturing Interests and the Representative Professional Interests of Allegheny County (Allegheny: Evening Record, 1897), 22.

Donald G. Presa and Jay Shockley, Cathedral of St. John the Divine and the Cathedral Close: Designation Report, New York City Landmarks Preservation Commission, 21 February 2017, 8.

E.E. Lanpher, "A Century of the Pittsburgh Waterworks," Proceedings of the Engineers' Society of Western Pennsylvania, 1929, 331; Pittsburgh Water and Sewer Authority, "History of the Pittsburgh Water Supply," <http://www.pgh2o.com/history>.

The Engineering Record, v. 34, no. 1, 6 June 1896, 15.

George C. Whipple, "Municipal Water Works Laboratories," Popular Science Monthly, December 1900.

The Inland Architect and News Record, v. 25, no. 2 (March 1890); The Philadelphia Real Estate Record and Builders' Guide, v. 5, no. 9 (5 March 1890).

L. Mordaunt Crook, *William Burges and the High Victorian Dream* (Chicago: The University of Chicago Press, 1981), 80.

Municipal Record: Proceedings of Common Council of the City of Pittsburgh, v. 30, no. 13, 27 September 1897.

Pennsylvania Historical & Museum Commission, "Pennsylvania Architectural Field Guide: Classical Revival Style, 1895-1950, www.phmc.state.pa.us/portal/communities/architecture/styles/classical-revival.html.

Peter B. Wright, "The Recent Fire at Pittsburgh: A Real Test on a Great Scale of Fire Resisting Construction and Material," *The Brickbuilder*, v. 6, no. 6 (June 1897), 117-23.

The Philadelphia Real Estate Record and Builders' Guide, v. 3, no. 43 (21 October 1888).

Reported in Philip John Kent, *The Meaning of the Romanesque Revival: A Study of Romanesque Revival Architecture and its Associations in Britain, the United States, and Australia*, Ph.D. dissertation (Bryn Mawr: Bryn Mawr College: 1993), 54.

The Pittsburgh Daily Post, 5 May 1881;

The Pittsburgh Daily Post, 21 October 1879.

The Pittsburgh Daily Post, 25 June 1880; "The Defective Pumping House,"

The Pittsburgh Press, 8 February 1896.

PWSA; Joel A. Tarr, "Infrastructure and City Building in the 19th and 20th Centuries," in S. P. Hays (ed.), *City at the Point: Essays in the Social History of Pittsburgh* (Pittsburgh: University of Pittsburgh Press, 1989), 222.

"Report of the Board of Freedmen's Missions," *Minutes of the Twenty-Sixth General Assembly of the United Presbyterian Church of North America—Appendix*, May 28-June 4, 1884, v. 6, no. 1, 72.

Rick Sebak, "Pittsburgh was the Coffee Capital of America!" *Pittsburgh Magazine*, 29 April 2010.

"Study Guide: Gothic Revival," Victoria and Albert Museum, <http://www.vam.ac.uk/content/articles/s/style-guide-gothic-revival/>; "William Burgess (1827-1881) – Thinkpiece," *The Architectural Review*, <https://www.architectural-review.com/essays/william-burges-1827-1881/10016439.article>.

William H. Birkmire, *The Planning and Construction of High Office-Buildings*, 4th ed. (New York: John Wiley & Sons: 1906), 161-87

Herron Hill Pumping Station

Historic Nomination Form

Site Plan, Photo Log, & Supplemental Images

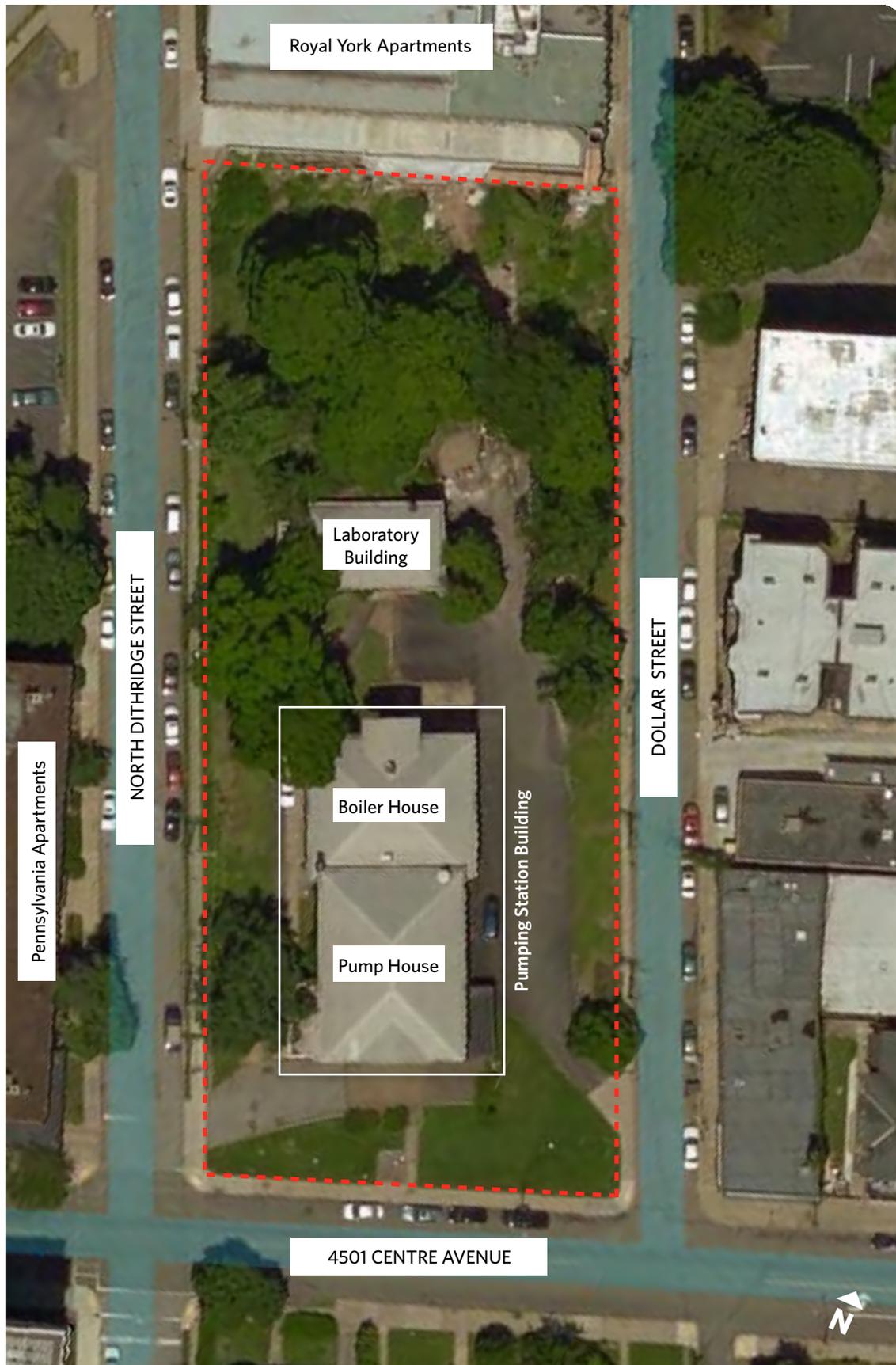


Figure 1. Site plan. Herron Hill Pumping Station (Bing Maps).

----- Nomination boundary / Parcel 27-D-35

Note: All images are by author, unless noted otherwise.



Figure 2. Front facade from across Centre Avenue, showing the downhill slope of the site from west to east and the exposed basement on the east side of the building. To the left are the Pennsylvania Apartments; to the right, behind the property are the Royal York Apartments.



Figure 3. Front (south) facade and west facades, showing the rise of North Dithridge Street up to the Royal York Apartments.



Figure 4. Looking down N. Dithridge Street to the south, showing (from left to right) the Laboratory Building, the Pumping Station Building, and One on Centre.



Figure 5. View from the Royal York Apartments, looking south, showing the steep slope of the site from north to south, with the One on Centre apartment building in the background.



Figure 6. Pittsburgh's Mission Street Pumping Station in 1912, showing the common typology of large pump house and more subordinate boiler house (Historic Pittsburgh).



Figure 7. The Pumping Station Building consists of the Pump House facing Centre Avenue (left) and the Boiler House attached behind it. Further to the rear is the detached Laboratory Building.



Figure 8. East facade of the Pumping Station Building looking west, showing the lower height of the Boiler House (right).



Figure 9. Rear facade of the Pumping Station Building looking south, showing the rear of the Pump House.



Figure 10. The Pump House, looking northeast, showing the four-bay wide front facade and five-bay wide west facade with the Boiler House to the rear.



Figure 11. West wall of the Pump House, showing typical red brick walls and Classically-derived pilasters with Tuscan capitals supporting a simple entablature above.



Figure 12. Front (south) facade of the Pumping Station Building, showing the formality and symmetry of William S. Fraser's Classical Revival design.



Figure 13. Detail of the front facade of the Pumping Station Building, showing a pilaster with Tuscan capital and egg-and-dart molding; the frieze containing the name and date of the building; and the triangular pediment above with its raking cornice of brick dentils.



Figure 14. Rear facade of the Pumping Station Building, showing a the projecting center bay on the rear of the Boiler House.



Figure 15. Rear and west facades of the Pumping Station Building, looking southeast.



Figure 16. The Herron Hill Pumping Station in 1907, showing original windows and doors, hipped dormers on the roof and a tall flag pole that stood in the west lawn (Historic Pittsburgh).



Figure 17. The Pumping Station Building c. 1900, showing the large corbeled brick chimney (left) that vented exhaust from the coal-fired boilers in the Boiler House (Harry B. Johnston, Carnegie Library of Pittsburgh).



Figure 18. Front facade, October 12, 1912, showing the gravel driveway to the main entrance and the southwest corner of the building prior to construction of the single-story addition (Historic Pittsburgh).



Figure 19. East facade, October 17, 1912, looking south, showing the cobblestone driveway and southeast corner of the building prior to construction of the single-story loading dock entrance (Historic Pittsburgh).



Figure 23. Detail of a typical cast iron column supporting the rail of the traveling crane.



Figure 28. Ground floor of the Pump House, October 17, 1919, showing the water distribution pipes (Historic Pittsburgh).



Figure 29. Interior of the Boiler House, October 12, 1912, looking south, showing the open double-height space and steel truss roof system above (Historic Pittsburgh).

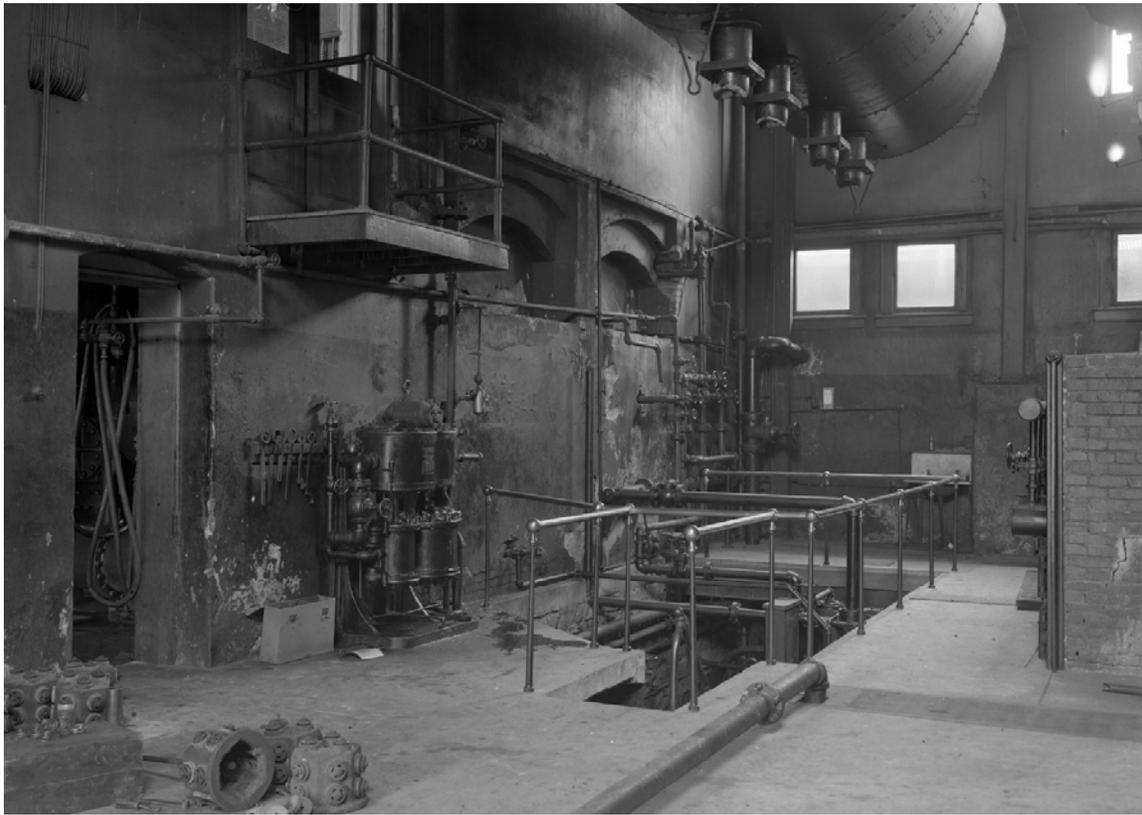


Figure 30. Interior of the Boiler House, December 8, 1915, looking southwest, showing a balcony (top left) that allowed workers in the Pump House to see into the Boiler House (Historic Pittsburgh).



Figure 31. Interior of the Boiler House, December 8, 1915, looking northeast, showing Boiler No. 3 (right). The inscription on the cast iron doors of the boilers reads "Edgemoor Iron Co. — Edge Moor — Delaware" (Historic Pittsburgh).



Figure 32. Interior of the Boiler House, January 8, 1919, looking northwest, showing demolition in preparation for new brick boiler foundations (Historic Pittsburgh).



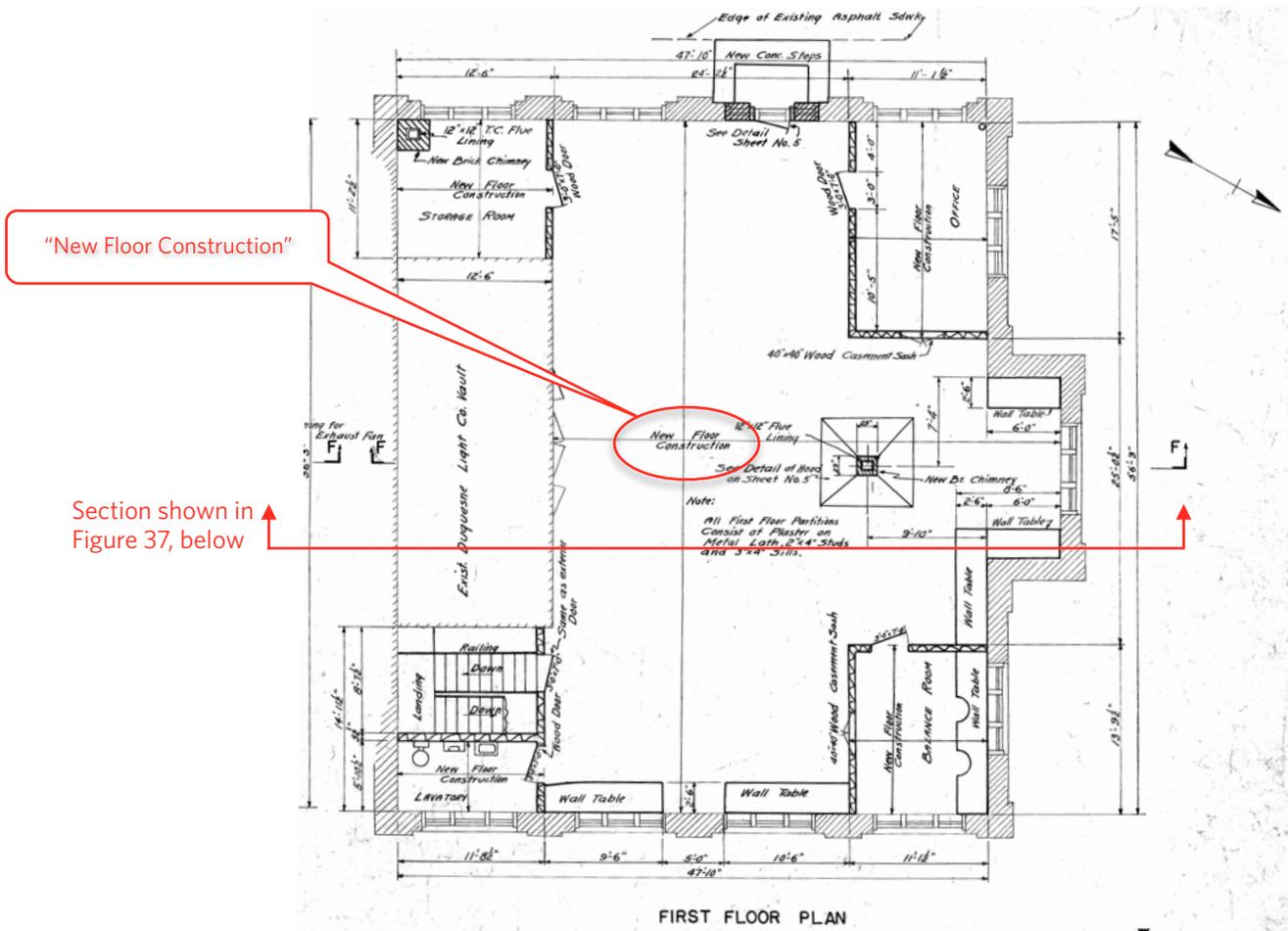
Figure 33. The east side of the Boiler House, January 4, 1919, looking northwest, showing new oil tanks that will soon be buried in the east yard. At the top center is a temporary frame enclosure attached to the east side of the Pump House to facilitate construction (Historic Pittsburgh).



Figure 34. Interior of the Boiler House, January 23, 1919, looking southeast, showing one of the boilers stripped of its enclosing brick foundation (Historic Pittsburgh).



Figure 35. The same boiler on February 18, 1919, showing erection of its new brick foundation in progress (Historic Pittsburgh).



Section shown in Figure 37, below

Figure 36. Plan of the new first floor of the Boiler House from 1939 construction drawings (City of Pittsburgh, Department of Public Works).

First Floor inserted, 1939

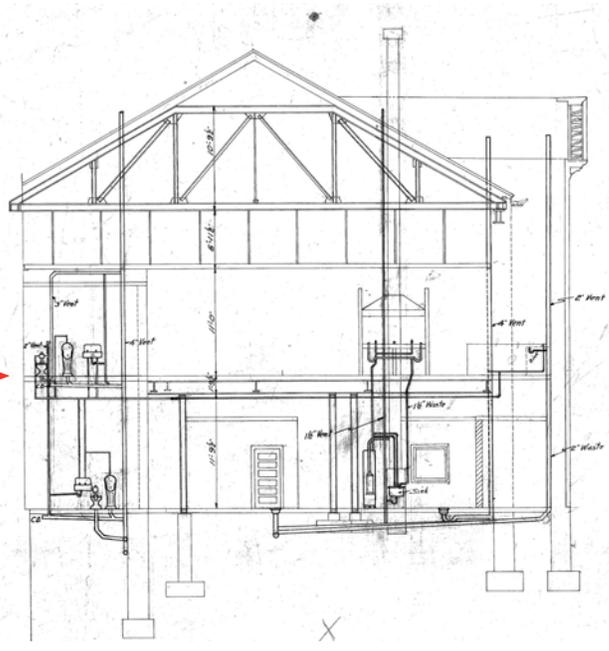


Figure 37. Section drawing through the Boiler House from 1939 construction drawings, looking west, showing insertion of the new floor after the boilers were removed (City of Pittsburgh, Department of Public Works).



Figure 38. The Laboratory Building, looking southeast, showing the bricked-in entry porch of its front (west) facade.



Figure 39. Front facade of the Laboratory Building, looking east.

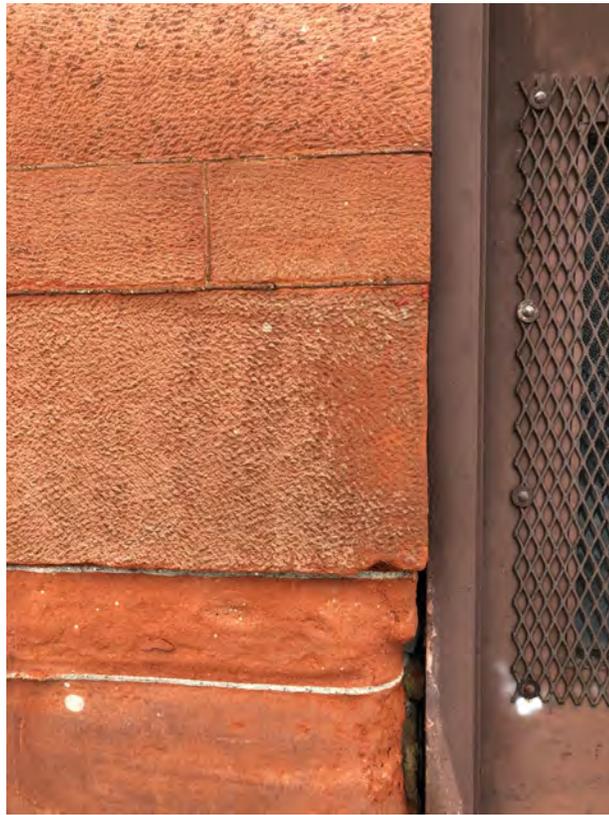


Figure 40. Laboratory Building, showing typical foundation stone details.



Figure 41. East and north facades of the Laboratory Building, looking southwest.



Figure 42. South facade of the Laboratory Building, looking north.



Figure 43A. Detail from a 1907 photograph, showing that the Laboratory Building originally contained a third story (Historic Pittsburgh).



Figure 43A. "Bird's-Eye View from Herron Hill," published in *Art Work of Pittsburg*, The George E. White Company, 1899. The view, looking to the southeast, shows the newly-constructed Herron Hill Pumping Station Building and the Herron Laboratory Building in the lower right corner. The now-demolished top floor of the Laboratory Building is clearly visible.



Figure 44. South facade of the Laboratory Building in 1909, looking north, showing the new roof being constructed after the top floor of the building was removed (Historic Pittsburgh).



Figure 45. North facade of the Laboratory Building in 1909, looking south, showing the new roof being constructed (Historic Pittsburgh).



Figure 46. East room of the first floor of the Laboratory Building, looking east.



Figure 47. Southwest room of the first floor of the Laboratory Building, looking northeast, showing surviving stairs, wood trim and basket weave tile.



Figure 48. Southeast room of the ground floor of the Laboratory Building, looking north, showing a cast iron column.



Figure 49. Detail from *Map of Pittsburgh and Its Environs*, 1835, showing Pittsburgh's nascent water supply system. Water was drawn from the Allegheny River at Cecil Alley into a steam powered engine house (A). From there it was pumped to the basin, or reservoir on Grant's Hill (B), 116 feet above the Allegheny River. Gravity was then used to distribute the water to the city below (Darlington Digital Library, University of Pittsburgh).



Figure 50. Detail from *The Cities of Pittsburgh and Allegheny, with Parts of Adjacent Boroughs*, 1855, showing Pittsburgh's expanded water supply system. Water was drawn from a new intake on the Allegheny River (A) then pumped to the Lower Basin (B) and the Upper Basin (C) in the Hill District (Historic Pittsburgh).

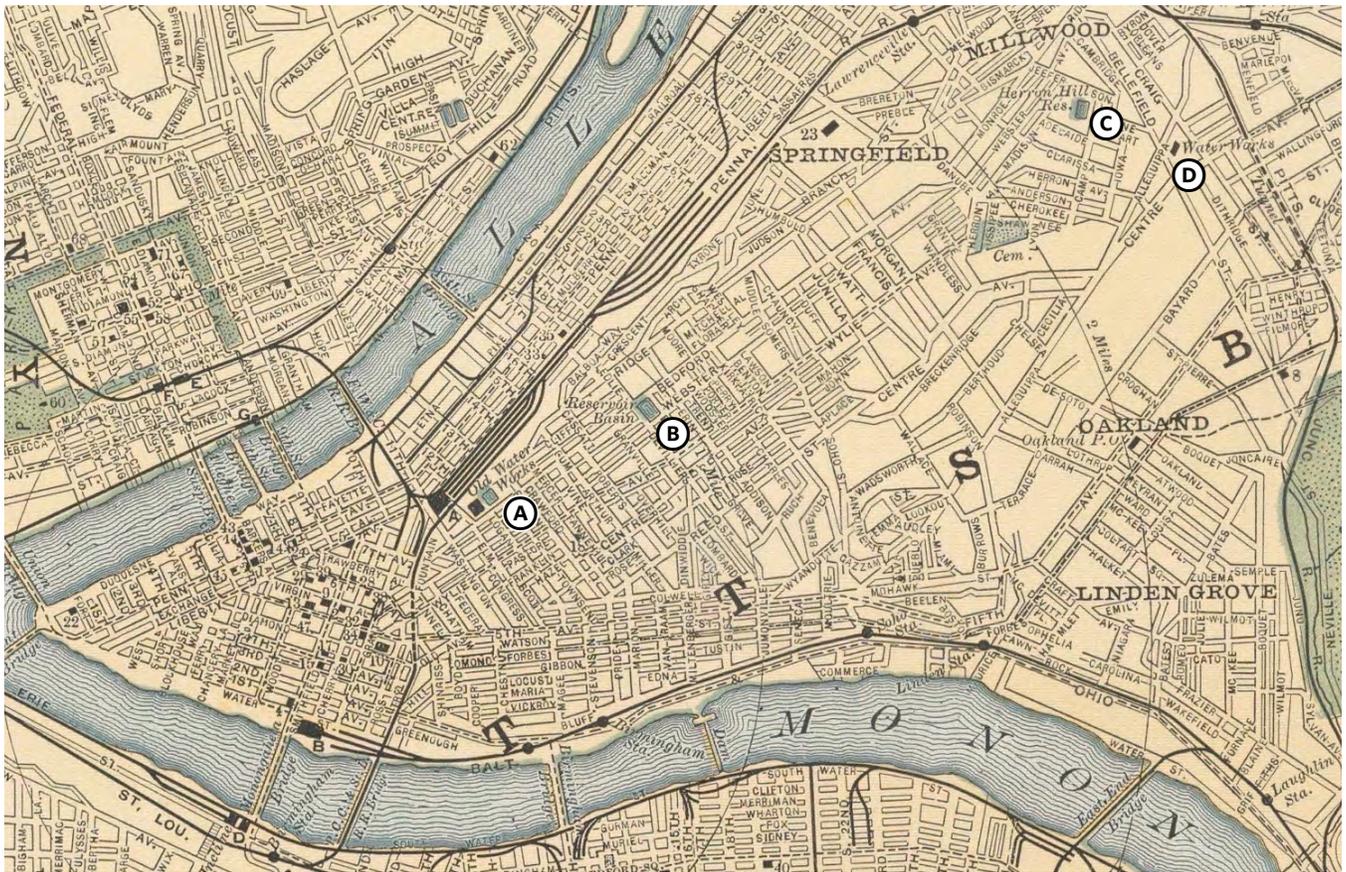


Figure 51. Detail from *Map of Pittsburgh and Allegheny, PA, Mathews-Northrup Co., 1891*, showing part of Pittsburgh's late-nineteenth century water supply system, much of which was created following annexation of twenty-one square miles of eastern suburbs into the city in 1868. Shown here are the "Old Water Works," referring to the the Lower Basin in the Hill District (Point A), the Upper Basin (B), the Herron Hill Reservoir (C), completed in 1880, and the first Herron Hill Pumping Station (D), also completed in 1880.



Figure 52A. Detail from an 1889 G.M. Hopkins Company map, showing the first Herron Hill Pumping Station

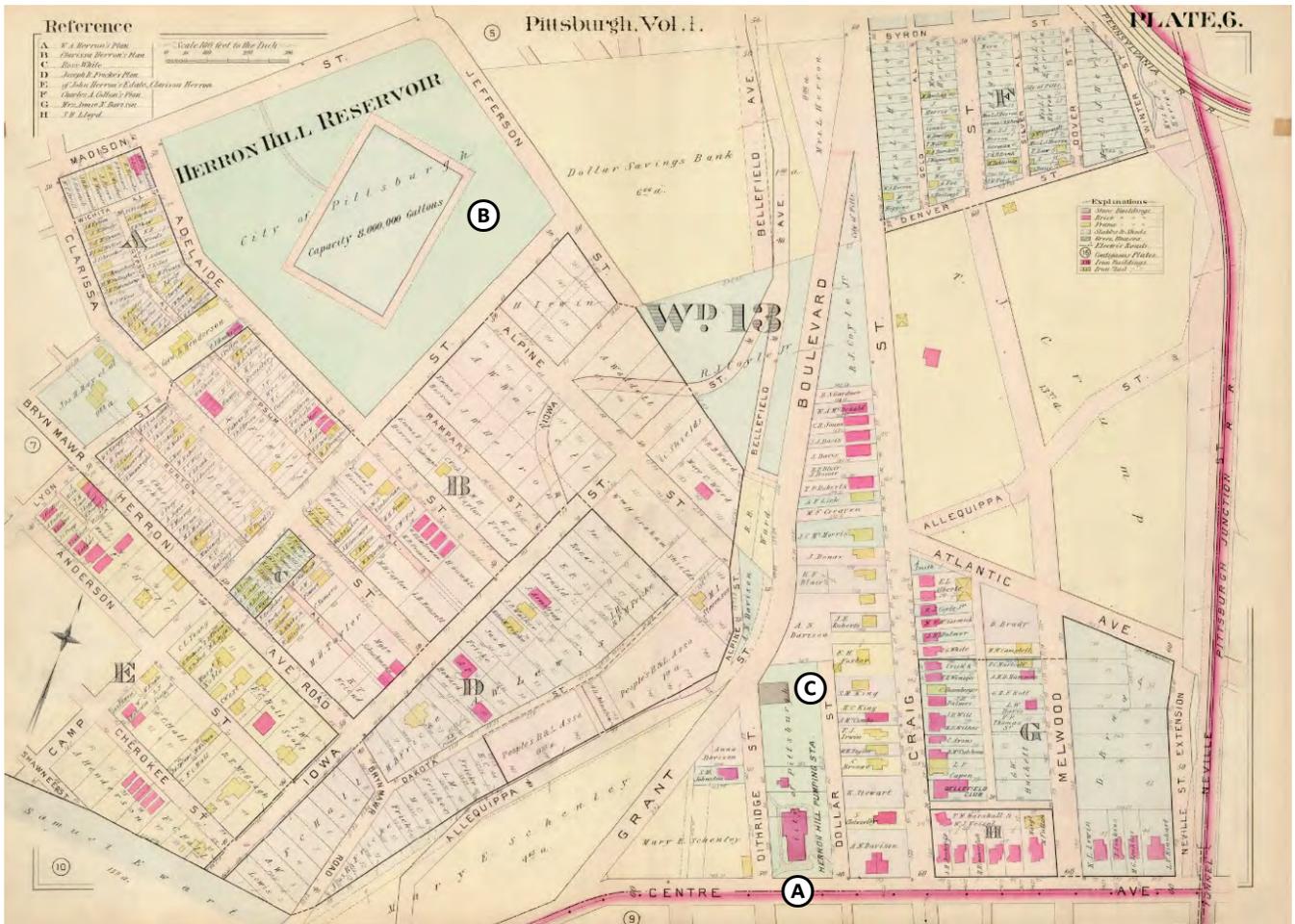


Figure 52B. Page from a 1904 G.M. Hopkins Company map, showing the relationship of the Herron Hill Pumping Station (A) to the Herron Hill Reservoir (B), as well as to the remains of the original pumping station (C) (Historic Pittsburgh).

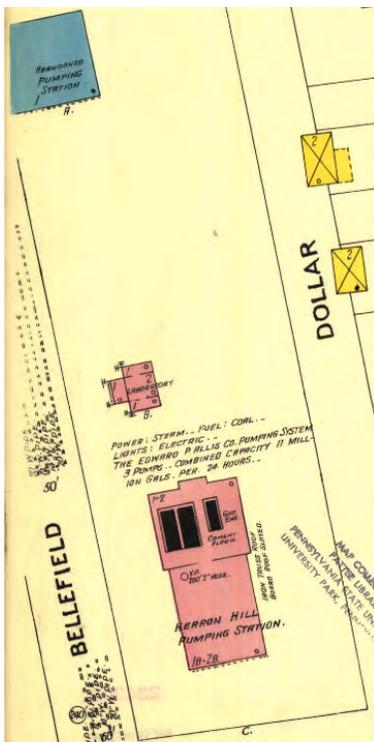


Figure 53. Detail from a 1905-06 Sanborn Fire Insurance Company map, showing the Pumping Station Building, Laboratory Building and the first pumping station, which by this time was abandoned.

Figure 54A. Announcement of the request for proposals from the February 8, 1896 edition of *The Pittsburgh Press* for erection of the Herron Hill Pumping Station, which included provision of a traveling crane. Contractors could obtain drawings from Fraser's Eighth Street office.

OFFICIAL—PITTSBURGH.
NOTICE TO CONTRACTORS.
 Pittsburgh, Feb. 8, 1896.
SEALED PROPOSALS WILL BE RECEIVED at the office of the city controller until Friday, February 21, at 2 p. m., for the following:
BUILDING.
 For the erection of the building for the new Herron Hill pumping station, located on Center avenue, near Bellefield avenue.
 Also for mechanical draught apparatus.
 For traveling crane.
 For coal handling apparatus.
 All to be put in above mentioned building.
 Plans and specifications for the building can be seen at the office of W. S. Fraser, architect, No. 4 Eighth street.
 Plans and specifications for the crane, mechanical draught and coal handling apparatus can be seen at the office of the superintendent of bureau of water supply and distribution.
 Bonds in double the amount of the estimated cost, probated before the mayor or city clerk, or the bond of a surety trust company must accompany each bid.
 The city of Pittsburgh reserves the right to reject any and all bids.
EDWARD M. BIGELOW,
 Director of Department of Public Works,
 226cm

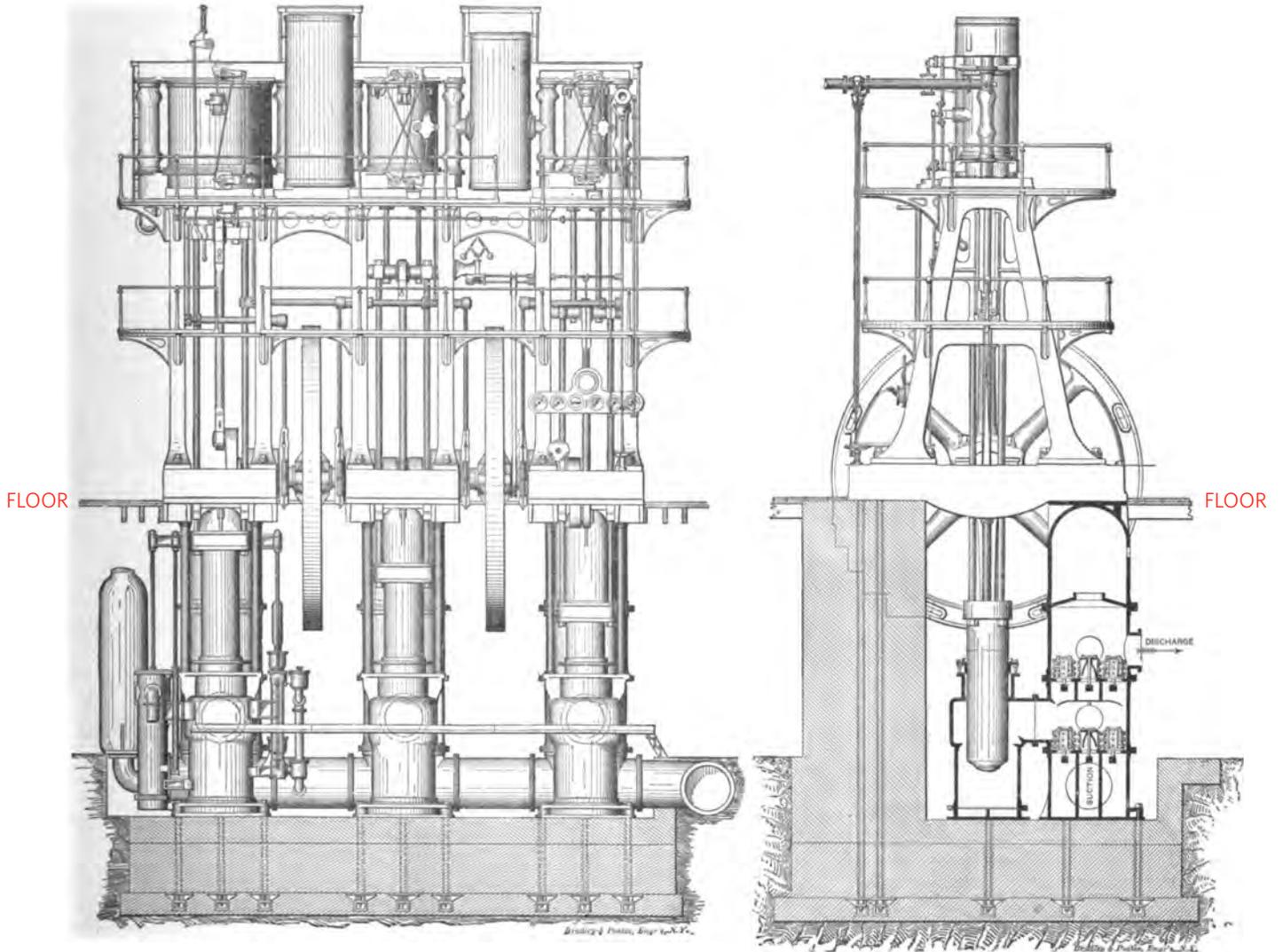


Figure 54B. Side and end elevation drawings of an Allis triple expansion pumping engine, similar to those used at the Herron Hill Pumping Station, showing the pumps on the ground floor and the engines extending up through the floor into the first story ("Testing of an Allis Pumping Engine," *The Engineering Record*, 2 December 1893, 5).

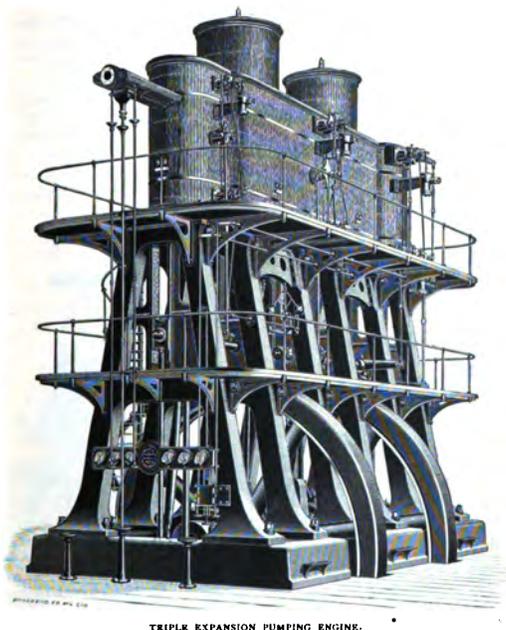


Figure 54C. Perspective drawing of just the engine component of an Allis triple expansion pump. This would have been similar to the equipment visible through the windows on the first floor of the Herron Hill Pump House ("American Inventors: Elisha Gray," *The National Magazine*, May-June 1893, v. 18, no. 1, 65).



Figure 55. First Congregational Church by Thomas Hannah, 1904, now Saint Nicholas Greek Orthodox Cathedral (Detail from historic postcard).

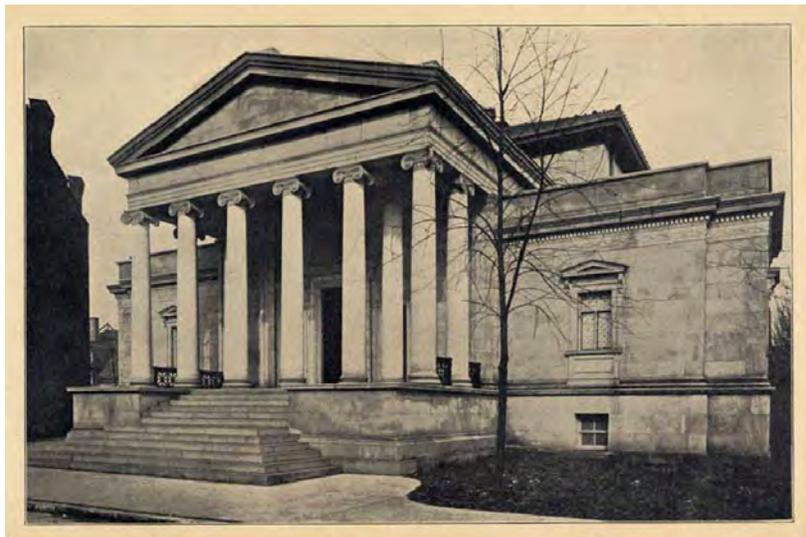


Figure 56. First Church of Christ, Scientist by Solon Spencer Beman, 1904 (Historic postcard).



Figure 57. South Side High School by Edward Stotz, 1897 (Historic postcard).

