

**NOMINATION OF HISTORIC DISTRICT
PHILADELPHIA REGISTER OF HISTORIC PLACES**

PHILADELPHIA HISTORICAL COMMISSION

SUBMIT ALL ATTACHED MATERIALS ON PAPER AND IN ELECTRONIC FORM ON CD (MS WORD FORMAT)

1. NAME OF HISTORIC DISTRICT

Wayne Junction Historic District

2. LOCATION

Please attach a map of Philadelphia locating the historic district.

Councilmanic District: 8

3. BOUNDARY DESCRIPTION

Please attach a map of the district and a written description of the boundary.

4. DESCRIPTION

Please attach a description of built and natural environments in the district.

5. INVENTORY

Please attach an inventory of the district with an entry for every property. All street addresses must coincide with official Office of Property Assessment addresses.

Total number of properties in district: 8

Count buildings with multiple units as one.

Number of properties already on Register/percentage of total: 1 / 12%

Number of significant properties/percentage of total: 1 / 12.5%

Number of contributing properties/percentage of total: 6 / 75%

Number of non-contributing properties/percentage of total: 1 / 12.5%

6. SIGNIFICANCE

Please attach the Statement of Significance.

Period of Significance (from year to year): from 1884 to c. 1950

CRITERIA FOR DESIGNATION:

The historic district satisfies the following criteria for designation (check all that apply):

- (a) Has significant character, interest or value as part of the development, heritage or cultural characteristics of the City, Commonwealth or Nation or is associated with the life of a person significant in the past; or,
- (b) Is associated with an event of importance to the history of the City, Commonwealth or Nation; or,
- (c) Reflects the environment in an era characterized by a distinctive architectural style; or,
- (d) Embodies distinguishing characteristics of an architectural style or engineering specimen; or,
- (e) Is the work of a designer, architect, landscape architect or designer, or engineer whose work has significantly influenced the historical, architectural, economic, social, or cultural development of the City, Commonwealth or Nation; or,
- (f) Contains elements of design, detail, materials or craftsmanship which represent a significant innovation; or,
- (g) Is part of or related to a square, park or other distinctive area which should be preserved according to an historic, cultural or architectural motif; or,
- (h) Owing to its unique location or singular physical characteristic, represents an established and familiar visual feature of the neighborhood, community or City; or,
- (i) Has yielded, or may be likely to yield, information important in pre-history or history; or
- (j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

7. MAJOR BIBLIOGRAPHICAL REFERENCES

Please attach a bibliography.

8. NOMINATOR

Name with Title: Staff of the Historical Commission Email: kim.chantry@phila.gov
Organization: Philadelphia Historical Commission Date: 17 April 2018
Street Address: 1515 Arch Street, 13th Floor Telephone: 215-686-7660
City, State, and Postal Code: Philadelphia, PA 19102

PHC USE ONLY

Date of Receipt: 17 April 2018

Correct-Complete Incorrect-Incomplete Date: 19 April 2018

Date of Preliminary Eligibility: _____

Date of Notice Issuance: 19 April 2018

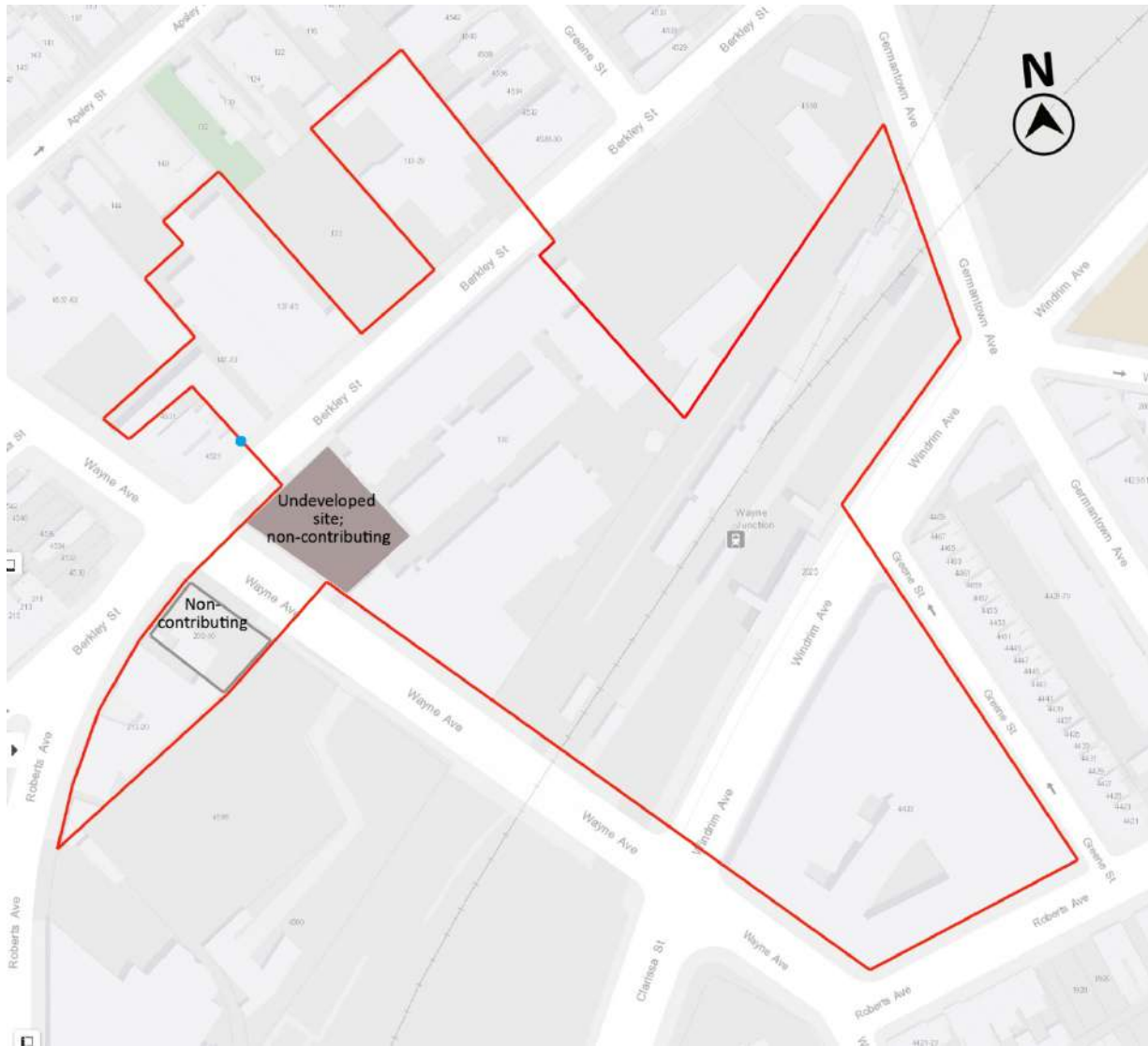
Date(s) Reviewed by the Committee on Historic Designation: 20 June 2018

Date(s) Reviewed by the Historical Commission: 13 July 2018

Date of Final Action: 13 July 2018

Designated Rejected

Boundary Description



The boundary of the Wayne Junction Historic District is as follows:

Beginning at a point on the Northwestern side of Berkley Street at a distance of approximately 72 feet Northeastwardly from the Northeastly side of Wayne Avenue (small blue dot on map); thence extending Northwestwardly the distance of approximately 78 feet to a point; thence extending Southwestwardly the distance of approximately 87 feet to a point (said point being on the Northeastly side of Wayne Avenue at a distance of 80 feet 10 inches from the Northwestern side of Berkley Street); thence extending Northwestwardly along Wayne Avenue the distance of approximately 34 feet to a point; thence extending Northeastwardly the distance of approximately 128 feet to a point; thence extending Northwestwardly the distance of approximately 77 feet to a point; thence extending Northeastwardly the distance of approximately 55 feet to a point; thence extending Northwestwardly

the distance of approximately 34 feet to a point; thence extending Northeastwardly approximately 75 feet to a point; thence extending Southeastwardly approximately 227 feet to a point; thence extending Northeastwardly approximately 100 feet to a point; thence extending Northwestwardly approximately 191 feet to a point; thence extending Northeastwardly approximately 125 feet to a point; thence extending Southeastwardly approximately 253 feet to a point on the South side of Berkley Street; thence extending Southwestwardly approximately 25 feet to a point at the corner of a mill building at 130 Berkley Street; thence continuing along the edge of two mill buildings Southeastwardly approximately 225 feet to the retaining wall for the train tracks; thence extending Northeastwardly along the retaining wall for the train tracks approximately 370 feet to the West side of Germantown Avenue; thence extending South along Germantown Avenue approximately 233 feet to a point; thence extending Southwestwardly along a retaining wall on Windrim Avenue approximately 212 feet to a point; thence extending Southeastwardly along the West side of Greene Street approximately 439 feet to a point; thence extending Southwestwardly along Roberts Avenue a distance of approximately 243 feet to a point; thence extending Northwestwardly along the Northeasterly side of Wayne Avenue a distance of approximately 691 feet; thence extending Southwestwardly across Wayne Avenue a distance of approximately 154 feet to the property line between 200-10 Roberts Avenue and 212-20 Roberts Avenue; thence continuing along the Southern property line of 212-20 Roberts Avenue a distance of approximately 233 feet to a point; thence extending Northeastwardly along the South side of Roberts Avenue and Berkley Street, along a slight curve, a distance of approximately 236 feet to the property line of 212-20 Roberts Avenue and 200-10 Roberts Avenue; thence continuing Northeastwardly along the South side of Berkley Street a distance of approximately 207 feet to a point along the South side of Berkley Street; thence extending Northwestwardly across Berkley Street approximately 61 feet to the place of beginning.

Description

The Wayne Junction Historic District is located in North Philadelphia, partially in both the Germantown and Nicetown neighborhoods of the city, and covers approximately twelve acres and sections of four city blocks. The shape of the district is irregular, and is centered on the Wayne Junction train station, which was a major reason for the industrial development of the district. The district is bordered by residential rowhouse development to the north along Apsley Street and south along Roberts Avenue, industrial and railroad lines to the west along Wayne Avenue, and railroad lines to the east crossing above Germantown Avenue. The topography of the Wayne Junction Historic District is generally flat, with a slight incline overall from south to north and a prominent elevated rail line that raises the ground in that location. Steps to the Wayne Junction train station offer a slightly raised view of the district from the station platform, although the contributing buildings to the north along Berkley Street are mostly blocked from view by the contributing mill buildings immediately to the north of the station. The landscaping is limited to several young street trees planted along concrete sidewalks, and the streets are paved with asphalt and are generally two lanes wide with parking on both sides, except for Windrim Avenue to the south which is four lanes with parking on both sides. Sidewalks that border the train station entrances are met on the station side with a thick stone retaining wall. The general layout of the Wayne Junction Historic District consists of one to four-story industrial buildings to the north, a mill complex and raised train station and tracks in the center, and a large industrial building to the south. The predominant architectural character of the Wayne Junction Historic District is industrial. While some buildings exhibit architectural detailing characteristic of specific styles, all were built to be functional. There are seven significant or contributing properties and one non-contributing building in the Wayne Junction Historic District. The non-contributing building, located at 200-210 Roberts Avenue, is considered to be non-contributing to the district because it is a service station, where no products were manufactured and which had no reliance on the nearby railroad. Additionally, the formerly separate parcel at Wayne Avenue and Berkley Street, formerly known as 4521 Wayne Avenue, and now consolidated with 130 Berkley Street, is considered an undeveloped site that is non-contributing to the historic district.

Red brick is the predominant façade material found in the Wayne Junction Historic District, and was a favored building material due to its fire resistance. All of the contributing buildings on Berkley Street are clad in red brick. Industrial buildings in the Wayne Junction Historic District range in scale from single-story production sheds to three-story loft factories. The industrial buildings range in construction dates, beginning as early as 1884, with additions constructed through the early 1950s. Overall, the district as a

whole retains integrity and has not been significantly altered despite new building uses by generally non-industrial tenants.

Being industrial in use, the lot sizes in the Wayne Junction Historic District are quite varied, based on the needs of the companies that initially occupied the buildings. An example of this variation is the New Glen Echo Mills complex, which occupies nearly an entire city block, compared to the Blaisdell Paper Pencil Company building, which sits on a parcel more suited in size for two rowhouses. The character of the district changes from individual smaller, red brick factories to a larger city block-sized industrial complex as one crosses southeast of the railroad tracks. The contributing buildings in the district generally lack any setback, and are instead built to the front lot line. An exception to this is the Moore Push-Pin building, which is set back several feet from the front lot line. The land uses and appearance of resources outside of the district are less industrial in nature and instead are more residential, with three to four-story rowhouses and twins, many of which were built as workmen's housing for factory workers.

While the factory buildings at Wayne Junction remained extant through Urban Renewal of the 1950s and 1960s, some changes did occur in the surrounding area. The most noticeable change was the 1950s extension of the Roosevelt Expressway through Nicetown. As with many other highway projects of the time, the extension visually divided a neighborhood and made transportation by automobile, not train, a more viable option. Rowhouses remained surrounding the district; however some that were vacant were demolished during this time. Inside of the boundaries of the district, there were no noticeable changes when comparing Philadelphia Land Use Maps from 1942 and 1962.

The character-defining features of the contributing buildings in the Wayne Junction historic district include massing, scale, façade rhythm, proportions, and exterior cladding materials.

Wayne Junction Historic District Inventory



- A. 212-20 Roberts Avenue, Max Levy Autograph - Contributing
- B. 200-10 Roberts Avenue - Non-contributing
- C. 147-53 Berkley Street, Arguto Oilless Bearing Company - Contributing
- D. 137-45 Berkley Street, Blaisdell Paper Pencil Company - Contributing
- E. 113-29 Berkley Street, Keystone Dry Plate & Film Works; Moore Push Pin - Contributing
- F. 130 Berkley Street, New Glen Echo Mills - Contributing
- G. 4481 Wayne Avenue, Wayne Junction Train Station - Significant
- H. 4433 Wayne Avenue, Brown Instrument Company - Contributing

A. Max Levy Autograph



Address: **212-20 Roberts Avenue**
OPA Acct #: **884563500**

Historic Name: **Max Levy Autograph**
Other Name[s]: **Graphic Arts Company**

Built: **1902, 1912, 1930, 1924-50**
Architect: **Carl P. Berger (main building and east addition)**
Source: **Philadelphia Architects and Buildings, Philadelphia Inquirer, Historic maps**

Stories: **2, 3 + raised basement**
Primary Façade Material[s]: **Brick, stone**
Style: **Beaux Arts Classical, Industrial**

Philadelphia Register Status: **Not listed**
National Register Status: **Contributing**

Description:

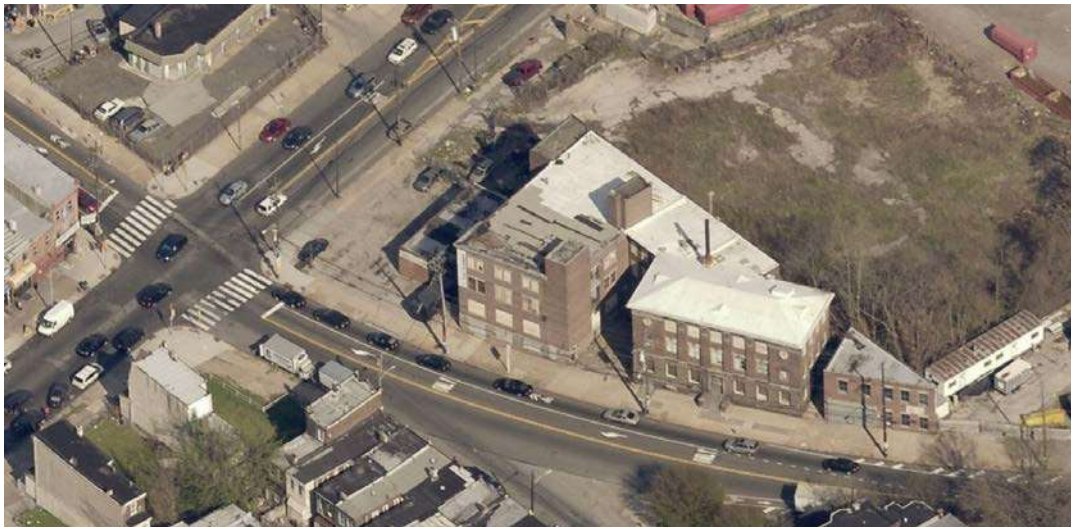
Complex of interconnected reinforced concrete buildings constructed at different times in the first half of the 1900s. Main building is three stories over a raised basement. High level of ornamentation for an industrial building. Basement and first floor are clad in rough-cut stone. Upper floors are clad in Flemish bond brick. Main entrance in central bay with ornamental door surround and "MAX LEVY" in raised letters in panel above door. Double-hung windows in first floor and second floor. Third floor windows infilled. Elaborate entablature at hipped roof. Secondary facades are in similar style but with less extravagant ornamentation. East addition is three stories over a raised basement, clad in rough-cut stone at basement and Flemish bond brick above. Many infilled windows. South (rear) addition is three stories over a raised basement. Infilled window openings. Triangular west addition is two stories with infilled window openings.

Proposed Wayne Junction District:
S/C/NC: **Contributing**

Additional Photographs:



Aerial view of 212-20 Roberts Avenue, looking north, which provides a view of the rear of the complex. Source: Pictometry, 4/11/2017.



Aerial view of 212-20 Roberts Avenue, looking east. Source: Pictometry, 4/11/2017.



Main entrance of 1902 building.



Infilled windows at third floor of 1902 building, showing high level of ornamentation.

B. Non-contributing service station



Address: **200-10 Roberts Avenue**
OPA Acct #: **882970370**

Historic Name: **N/A**
Other Name[s]: **Service Station**

Built: **c. 1935**

Stories: **1**
Primary Façade Material[s]: **Brick**
Style: **Industrial**

Philadelphia Register Status: **Not listed**
National Register Status: **Non-contributing**

Description:
One-story masonry building fronting Wayne Avenue. Structure has two garage door openings on primary elevation and office space in remainder of building.

Proposed Wayne Junction District:
S/C/NC: **Non-contributing**

Notes: Replaced a sheet metal shop that had previously replaced a church building.

C. Arguto Oilless Bearing Company



Address: **147-53 Berkley Street**
OPA Acct #: **776064000**

Historic Name: **Arguto Oilless Bearing Co.**
Other Name[s]: **National Tool and Stamping Co.**

Built: **1903, c. 1910, 1924-50**
Architect: **Mellor and Meigs (one-story building on Berkley St)**
Source: **Philadelphia Architects and Buildings**

Stories: **1, 3**
Primary Façade Material[s]: **Brick**
Style: **Industrial**

Philadelphia Register Status: **Not listed**
National Register District Status: **Contributing**

Description:
One-story building with one-story production shed in rear; three-story building to the west; and three-story building fronting Wayne Avenue that connects in the rear to the other three-story building. All faced in red brick. One-story building (c. 1910) missing much of its roof. Features two entrances between sets of casement windows. Stone band above with engraving of "Arguto Oilless Bearing Co." Remains of projecting cornice. Three-story building on Berkley Street has main entrance flanked by glass block infilled windows. Double casement windows on second and third floors. Multi-pane windows on sides. Three-story building on Wayne Avenue has similar brickwork to other three-story building. Entrance and window on first floor; two window openings on second and third floors with paired 1/1 double-hung windows. Stone band above first floor with engraving of "Arguto Oilless Bearing Co."

Proposed Wayne Junction District:
S/C/NC: **Contributing**

Additional Photographs:



Aerial view looking north of the L-shaped complex at 147-53 Berkley Street. Source: Pictometry, 4/11/2017.



One-story Arguto Oilless Bearings Company fronting Berkley Street, April 2018.

D. Blaisdell Paper Pencil Company



Address: **137-45 Berkley Street**
OPA Acct #: **884561300**

Historic Name: **Blaisdell Paper Pencil Company**
Other Name[s]: **National Tool & Stamping Company, Macbeth Arc Lamp Company**

Built: **1903, c. 1914, c. 1923**
Architect:
Source: **Historic maps, Philadelphia Inquirer**

Stories: **2 story with raised basement, 1 story rear**
Primary Façade Material[s]: **Brick, stone**
Style: **Industrial**

Philadelphia Register Status: **Not listed**
National Register Status: **Contributing**

Description: Raised basement clad in stone with infilled window or door openings. Red brick second and third floors with yellow brick arched window openings that have been infilled with smaller windows. Rear one-story production shed with infilled window openings.

Proposed Wayne Junction District:
S/C/NC: **Contributing**

Additional Photographs:



View of long one-story production shed at rear of 137-45 Berkley Street, April 2018.



Aerial view of 137-45 Berkley Street, showing roof condition at rear of property. Source: Pictometry, 3/19/2016.

E. Keystone Dry Plate & Film Works; Moore Push Pin



Address: **113-29 Berkley Street**
OPA Acct #: **884561100**

Historic Name: **Keystone Dry Plate & Film Works; Moore Push Pin**
Other Name[s]:

Built: **1884, additions through 1950**
Architect:
Source: **Historic maps**

Stories: **2 (main building), 1 and 2 story additions**
Primary Façade Material[s]: **Brick**
Style: **Industrial**

Philadelphia Register Status: **Individually designated, 12 December 2014**
National Register Status: **Contributing**

Description: Main building brick façade painted red. Central entrance flanked by two windows on each side. Five window openings on second floor front. Windows continue on both sides. "Moore Push Pin" ghost sign visible on side. Gable roof. Non-original additions on both sides/rear of main building.

Proposed Wayne Junction District:
S/C/NC: **Contributing**

Additional Photographs:



West side of 113-29 Berkley Street, showing faded Moore Push-Pin painted sign, April 2018.



Front and east side of 113-29 Berkley Street, showing 1950s one-story addition. Source: Cyclomedia, 5/19/2017.

F. New Glen Echo Mills



Address: **130 Berkley Street**
OPA Acct #: **884561010**

Historic Name: **New Glen Echo Mills**
Other Name[s]: **Wayne Mills**

Built: **1885, 1910**
Architect:
Source: **Historic maps**

Alteration Date[s]: **c. 1920**
Source[s]: **City ordinance, 1913**

Stories: **1-3**
Primary Façade Material[s]: **Brick**
Style: **Industrial**

Philadelphia Register Status: **Not listed**
National Register Status: **Contributing**

Description:

The New Glen Echo Mills complex is a group of brick industrial buildings located between Wayne and Germantown avenues, Berkley Street, and the railroad tracks. The complex occupies the eastern half of the block. All buildings except the dye house feature gable roofs. All buildings were designed in an industrial style, with brick cladding, narrow brick piers dividing structural bays, window and door openings with shallow arched heads, and wood or replacement aluminum lintels. A typical façade terminates in brick corbelling. Many window and door openings throughout the complex have been infilled. The dye house, known as Building 8 in the aerial, is outside of the boundary of the historic district. The boundary runs along the edge of Buildings 5 and 6. The formerly separate parcel at Wayne Avenue and Berkley Street, formerly known as 4521 Wayne Avenue, and now consolidated with 130 Berkley Street, is considered an undeveloped site that is non-contributing to the historic district. The one-story building shown on that site in the aerial below was demolished prior to the submission of this nomination.

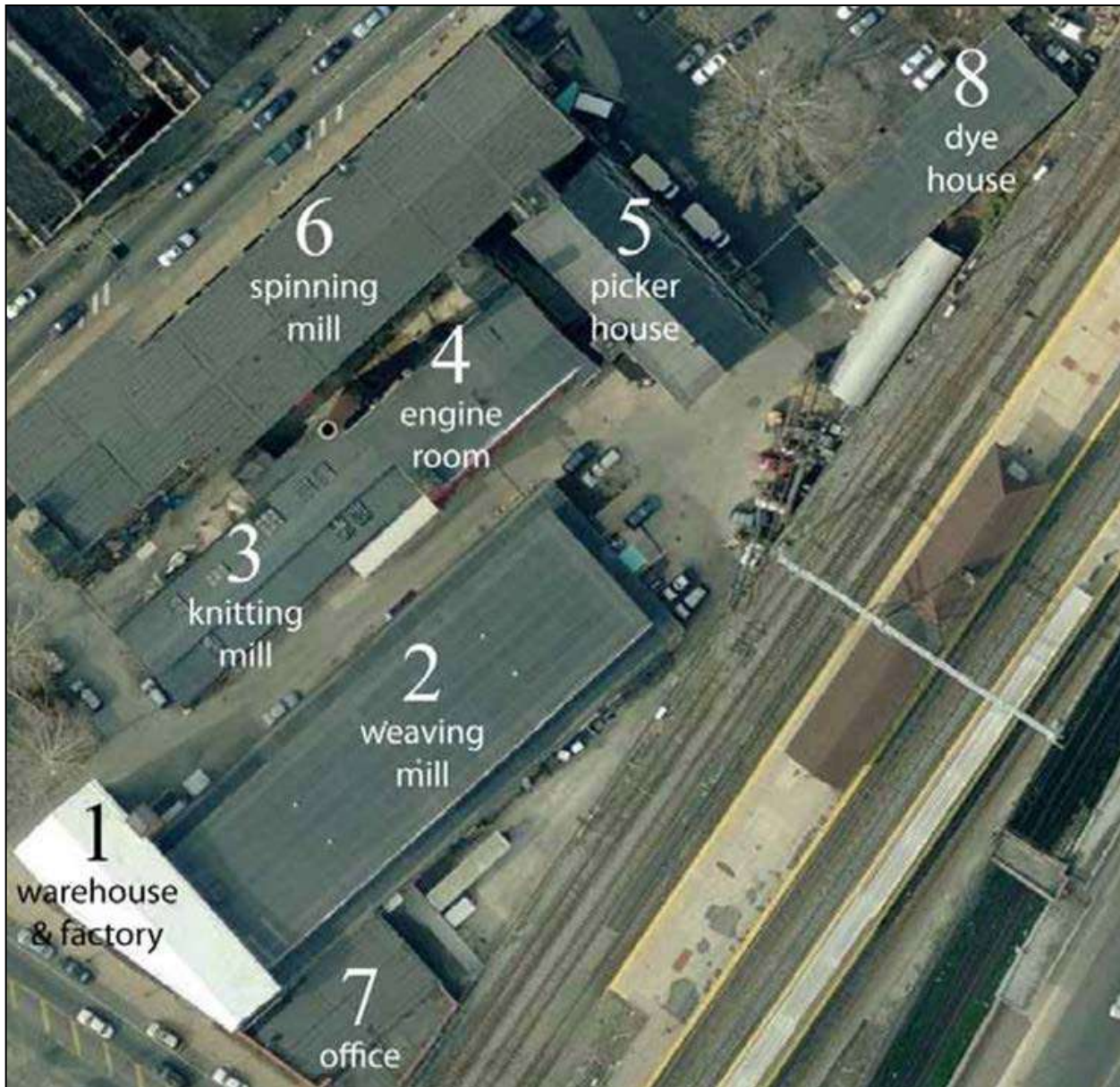
Proposed Wayne Junction District:

S/C/NC: Contributing

Additional Photographs:



Aerial view of 130 Berkley Street, looking north. Source: Pictometry, 4/11/2017.



Aerial view of the New Glen Echo Mills complex. These numbers will be used throughout the nomination to refer to different buildings in the complex.



Corner of Wayne Avenue and Berkley Street, showing recent demolition of a service station which was not part of the historic mill, April 2018.



Looking northwest from the Wayne Junction train station at several mill buildings, April 2018.

G. Wayne Junction Station



Address: **4481 Wayne Avenue**
OPA Acct #: **875105730**

Historic Name: **Wayne Junction Station**
Other Name[s]: **SEPTA Wayne Junction Train Station**

Built: **1901**
Architect: **Wilson Brothers and Company**
Source: **Historical Commission files, *Philadelphia Inquirer***

Alteration Date[s]: **1936 (Wayne Ave headhouse demolished); c. 2000 (majority of canopy removed); 2015 (complete rehabilitation/new construction)**
Architect[s]: **UCI Architects (2015 complete rehabilitation)**
Source[s]: **A.D. Marble & Company *Determination of Effect Report***

Stories: **1.5**
Primary Façade Material[s]: **Brick, Stone**
Style: **Gothic Revival (main station house)**

Philadelphia Register Status: **Not listed**
National Register Status: **Contributing to Colonial Germantown (NRHD 1966; 1987) & Wayne Junction (NRHD 2012)**

Description:
The Germantown Avenue headhouse and the main station house are constructed of yellow brick with rusticated stone base. Roofs have been restored with red tile. Decorative masonry detailing includes medallions between the windows, quoins at the corners and along window openings and brackets at the cornice. Germantown Avenue headhouse has rounded window openings; main station house has arched window openings. Platform canopies rehabilitated with metal roofing. Baggage and passenger tunnels over tracks rehabilitated.

Proposed Wayne Junction District:
S/C/NC: **Significant**

Additional Photographs:



Aerial view of the Wayne Junction Train Station, looking north. Source: Pictometry, 4/11/2017.



Main station house, April 2018.



Detail at main station house, April 2018.



Germantown Avenue headhouse, April 2018.

H. Brown Instrument Company



Address: **4433 Wayne Avenue**
OPA Acct #: **884071500**

Historic Name: **Brown Instrument Company**
Other Name[s]: **Krout & Fite, Wrigley Manufacturing Co., Minneapolis Honeywell, Extra Space Storage**

Built: **c. 1910, c. 1920, 1929, 1949**
Architect: **Ballinger Company (1929 two-story addition)**
Source: **Historic maps, Zoning Permit applications**

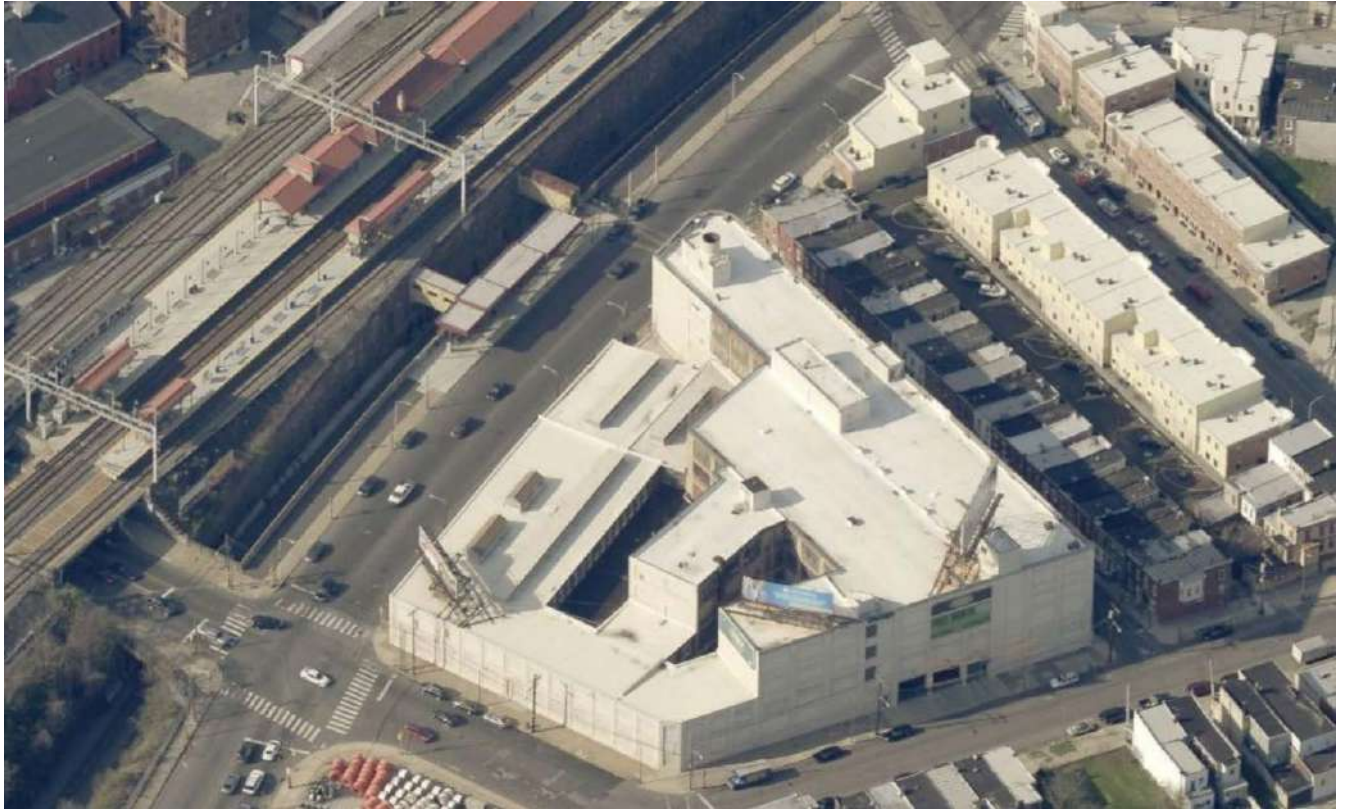
Stories: **1 - 4**
Primary Façade Material[s]: **Brick**
Style: **Art Moderne-style corner, Industrial**

Philadelphia Register Status: **Not listed**
National Register Status: **Contributing**

Description:
Complex of irregularly-shaped brick industrial buildings. Majority of red brick is painted beige. Large infilled arched window openings on all facades. Prominent feature is 1949 Art Moderne-style corner at Windrim Avenue and Greene Street. Wayne Avenue entrance retains arched pediment with etched "THE BROWN INSTRUMENT COMPANY" sign.

Proposed Wayne Junction District:
S/C/NC: **Contributing**

Additional Photographs:



Aerial view of 4433 Wayne Avenue. Source: Pictometry, 4/11/2017.



Entrance on Wayne Avenue façade with "The Brown Instrument Co" engraved. Source: Cyclomedia, 8/1/2017.

Statement of Significance

The Wayne Junction Historic District comprises a significant historic resource that merits designation by the Philadelphia Historical Commission and inclusion on the Philadelphia Register of Historic Places. The Wayne Junction Historic District satisfies Criteria for Designation G and J as enumerated in Section 14-1004 of the Philadelphia Code.

(G) Is part of or related to a square, park or other distinctive area which should be preserved according to an historic, cultural or architectural motif.

(J) Exemplifies the cultural, political, economic, social or historical heritage of the community.

Under Criterion G, the buildings are part of a distinctive industrial area which should be preserved for its ties to Philadelphia's manufacturing history. Under Criterion J, Wayne Junction is an intact industrial area that exemplifies the economic heritage of the neighborhood and the City of Philadelphia. The Wayne Junction train station was the locus of mills and workshops that capitalized on rail transportation to move in raw goods and send out finished products. Products produced here ranged in size from the very large to the very small: It was home to one of the largest carpet manufacturers in the nation, in addition to the company that invented the push-pin. The period of significance is from 1884, the construction date of the first extant factories, to circa 1950, when manufacturers started to relocate to the suburbs.

The Industrial Development of the Wayne Junction Historic District

The Wayne Junction Historic District's development was heavily influenced by the expansion of railroad lines in Philadelphia. The Philadelphia, Germantown & Norristown Railroad, the first rail line to operate in Philadelphia, was built in 1832.¹ By providing relatively easy and fast transportation between downtown Philadelphia and Germantown, the railroad moved Germantown "from a struggling village into a merchandise and manufacturing center."²

¹ G. M. Hopkins, *Atlas of Germantown*, 1871, Plate 12 (held by the Map Collection, Free Library of Philadelphia); Charles Francis Jenkin, *The Guide Book to Historic Germantown* (Germantown, PA: Site and Relic Society, 1902), 15; A. D. Marble & Company, *Determination of Effect Report*, 54.

² Edward B. Phillips, "Historian Sees Dazzling Spectacle," *The Germantown Crier*, Vol. 11, no. 1 (March 1959), 21-22 (held by the Germantown Historical Society).

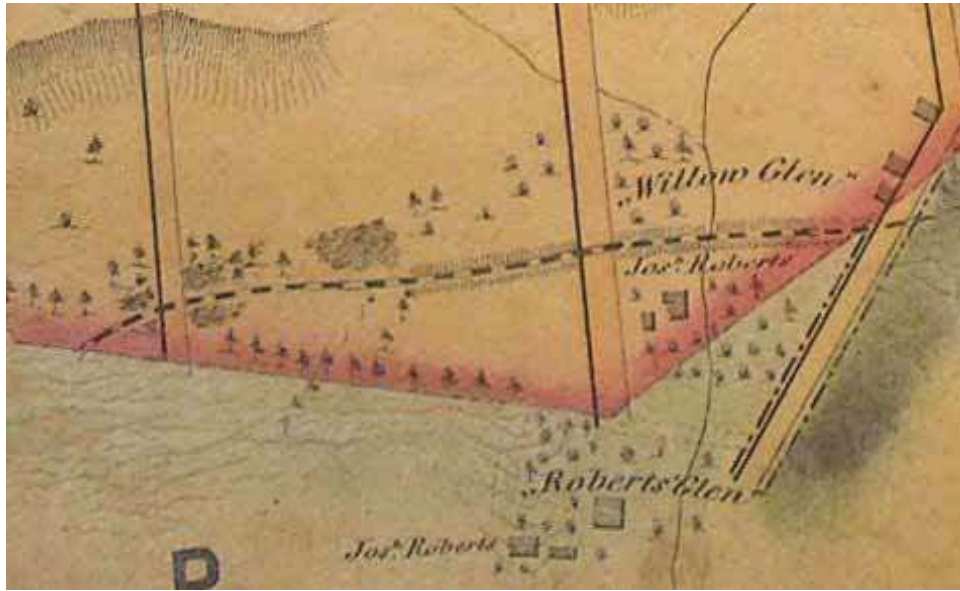


Figure 1. Wayne Junction area, 1851. Source: Map of the Township of Germantown, A. E. Rogerson and E. J. Murphy, Germantown Historical Society.

The railroad-driven development boom did not reach Wayne Junction for more than forty years. In contrast to bustling Germantown nearby, the land around Wayne Junction was occupied by rural estates until circa 1880³ (Figure 1 and Figure 2). This difference is explained by the lack of sizeable rivers or streams: early industries' reliance on water as a power source made a waterside location imperative.⁴



Figure 2. Horse car on Nagley's Hill, near present-day Wayne Junction, 1863. Source: John Richards Sketchbook (Photo Box 8, Envelope 9), Germantown Historical Society.

³ Hopkins, 1871; G. M. Hopkins, *Atlas of the City of Philadelphia, 22nd Ward* (Philadelphia, 1885). Plate 15 (held by the Map Collection, Free Library of Philadelphia).

⁴ *Nicetown Urban Renewal Area Technical Report*, 1.

In 1870, the Philadelphia & Reading Railroad, a major regional anthracite supplier and transporter, continued to expand its passenger rail routes.⁵ It acquired the Philadelphia, Germantown & Norristown Railroad and renamed the line through Wayne Junction the Germantown and Chestnut Hill Branch.⁶ Wayne Station, the precursor to Wayne Junction Station, first appears definitively on an 1871 map, and in a sketch drawn after 1881 (Figure 3, middle).⁷ The map also shows two harbingers of future growth: a silk factory located at the intersection of Wayne Avenue and Berkley Street, and a few residences between Berkley and Apsley streets (Figure 4).

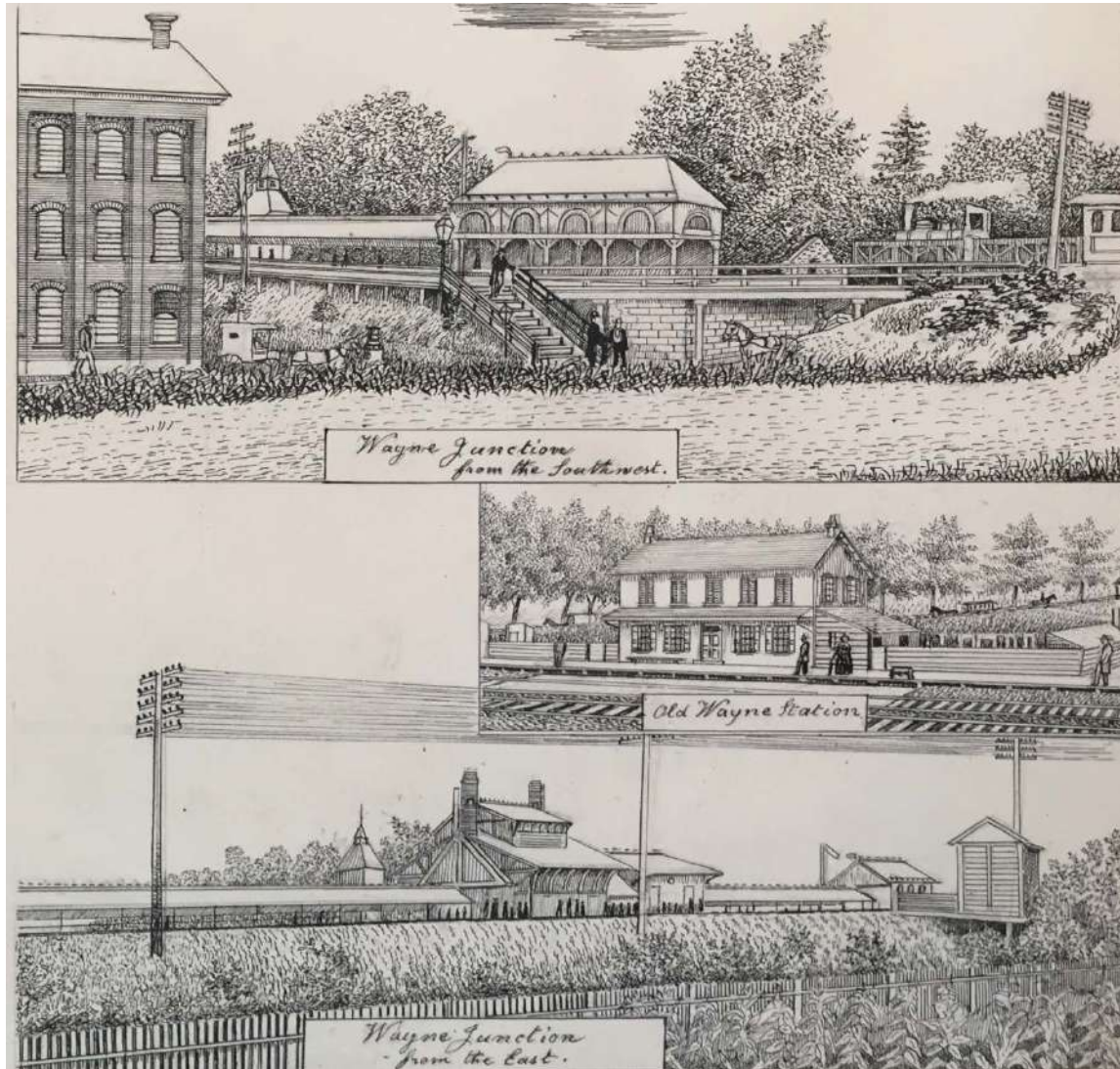


Figure 3. Early sketches of the Furness-designed station at top and bottom, completed in 1881 or soon thereafter. “Old Wayne Station” sketched in middle, presumably the first station located at Wayne Junction, before Furness-designed 1881 station. Source: John Richards Sketchbook (Photo Box 8, Envelope 9, p. 101), Germantown Historical Society.

⁵ The Philadelphia & Reading established its first passenger route in 1854. (Joseph A. Fisher, *The Reading’s Heritage (1833-1958): 125th Anniversary of a Pioneer Railroad*, New York: The Newcomen Society in North America, 1958, p. 22).

⁶ A. D. Marble & Company, *Determination of Effect Report*, 54.

⁷ A station building may appear on Charles Ellet, Jr.’s 1843 map of Philadelphia County, but it is unclear (held by the Map Collection, Free Library of Philadelphia; accessed through PhilaGeoHistory, April 19, 2010). The station labeled “Wayne Station” first appears on G. M. Hopkins’s 1871 Atlas of Germantown.

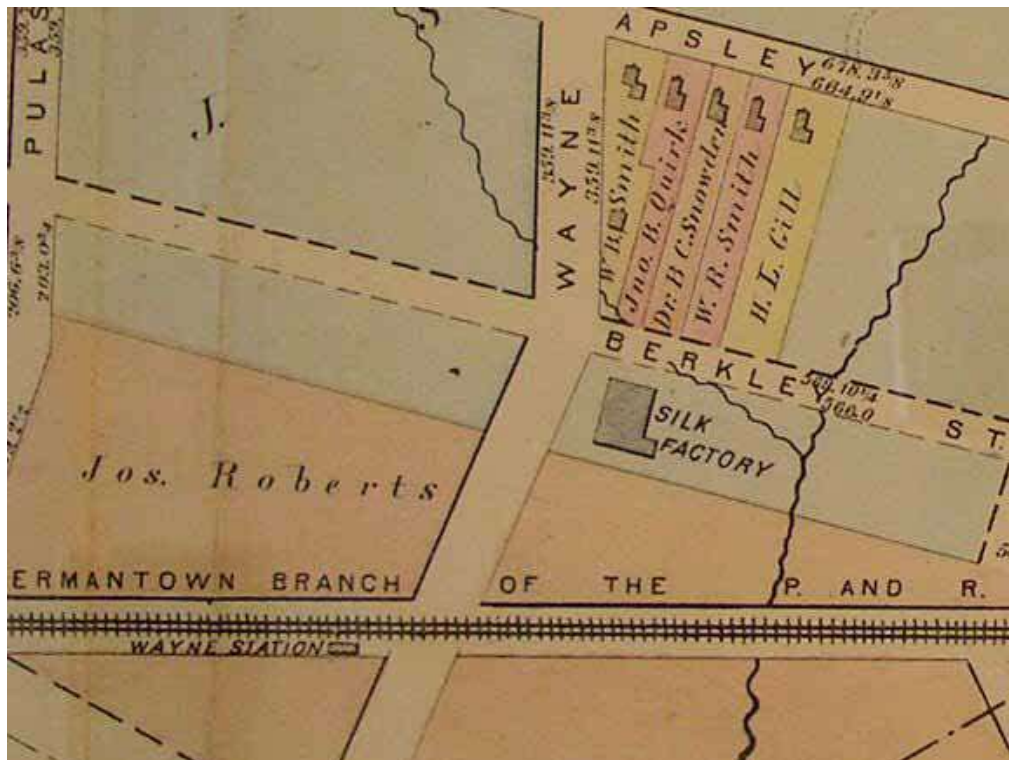


Figure 4. Wayne Junction area, 1871. Source: Atlas of Germantown, G.M. Hopkins, Germantown Historical Society.

In 1879, the Philadelphia & Reading acquired the North Pennsylvania Railroad.⁸ To allow interchanges of freight cars, the two-mile Tabor Branch was built between Wayne Station and Tabor Station. The new branch made Wayne Junction a fledgling rail nexus for freight transportation and passenger travel. The Philadelphia & Reading Company declared bankruptcy in 1880.⁹ After a financial rescue and considerable internal political maneuvering, the company president, Franklin Gowen, retained power and embarked on a “grandiose plan...which would transform what was a regional coal road into a strategic trunk line.”¹⁰ Increased passenger volume supported the plan, and the Philadelphia & Reading retrofitted 25 passenger cars, debuted and built a new type of passenger car, and constructed new stations or facilities at nine locations in its system.

The Wayne Junction depot was one of those. It was rebuilt in 1881 with a design by prominent local architect Frank Furness (Figure 5). Two years later, the station received more additions and alterations. A new warehouse and freight yard were built, an additional waiting room was enclosed, a boiler-house was added to supply steam heating, and a Furness- designed restaurant was constructed at the station.¹¹

⁸ Bert Pennypacker, “Ramble on the Reading,” *National Railway Bulletin* 55, no. 6 (1990): 27.

⁹ James L. Holton, *The Reading Railroad: History of a Coal Age Empire*, Vol. 1 (Laury’s Station, Pennsylvania: Garrigues House, 1989), 219.

¹⁰ Holton, *The Reading Railroad*, 226.

¹¹ *Report of the Operations of the Philadelphia & Reading Railroad Company*, Philadelphia & Reading Railroad Company (Isaac M. Moss, 1884), 55, 87 (Google Books).



Figure 5. (Left) Wayne Junction Station, n.d. (after 1881). Source: Germantown Historical Society, Photo Box 7, Envelope 9. (Right) Signal towers at Wayne Junction Station, n.d. (circa 1882). Source: *The Reading Railroad*, by James L. Holton, p. 122.

The physical changes of the early 1880s accompanied a larger shift: in 1883, Baltimore & Ohio trains running between Philadelphia and Jersey City, New Jersey, changed routes to run through Wayne Junction.¹² This shift made Wayne Junction “a stop of increasing importance.”¹³ The Philadelphia & Reading again declared bankruptcy in 1884, but it continued to operate in receivership.

Rail access and technological advances in steam power augured a new type of development around the station as manufacturers, freed from the need to locate near running water, saw opportunity in the railroads and open land. In 1885, New Glen Echo Mills relocated from a site farther north on Germantown Avenue to a new complex west of the rail station, and John Carbutt constructed a building for photography supplies on Berkley Street.¹⁴ A small industrial building (demolished in the 1930s) occupied the northwest corner of the New Glen Echo Mills block, the two-building Tonawanda Mills complex (demolished before 1942) stood across Wayne Avenue, and two small buildings owned by the Philadelphia & Reading Railroad Co. stood southeast of the railroad on the present site of the Brown Instrument Company.¹⁵ New row houses clustered nearby on Apsley and Greene Streets and Germantown Avenue, and provided housing for an influx of factory workers. Land to the west remained rural, with larger houses sited on generous lots and a street grid that was platted but not built (Figure 6).

¹² Pennypacker, “Ramble on the Reading,” 27; *The Baltimore & Ohio Railroad Official Guide*, September 1938, qtd. in Eric H. Bowen, *Streamliner Schedules* (<http://www.streamlinerschedules.com/concourse/track3/royalblue193809.html>, updated March 27, 2010).

¹³ *Ibid.*

¹⁴ *Workshop of the World*; Hopkins, 1885, Plate 15; *Philadelphia City Directory*, 1886.

¹⁵ The current non-contributing building on this lot was built in 1934, following the demolition of a vacant three and one-half story factory building that stood on the site. Application for Zoning Permit and/or Use Registration Permit, Application #2374, Zoning Permit #655, Use Registration Permit #531, 2/27/1934. Accessed through Philadelphia’s Zoning Archive Online at <http://www.phila.gov/zoningarchive/>, July 1, 2010; Hopkins, 1885.



Figure 6. View looking northwest on Wayne Avenue. On the left is Tonawanda Mills (demolished) and in the distance are houses on Apsley Street (extant), 1894. Source: Historical Society of Pennsylvania.

Beginning in the early 1890s, substantial residential development occurred southeast of Wayne Junction Station. All of Philadelphia was expanding with an influx of immigrants who pushed the population to one million people by 1920, and many settled in Wayne Junction.¹⁶ Wayne Junction became home to workers who lived in narrow two- and three-story row houses on streets like Greene, Roberts, and Dennie.¹⁷ These residents—many of whom were immigrants from Poland—supplied labor for the burgeoning local industries.

¹⁶ Miller, Fredric, Morris J. Vogel, and Allen Freeman Davis, *Still Philadelphia: A Photographic History, 1890-1940* (Philadelphia: Temple University Press, 1983), 223.

¹⁷ George Bromley, *1895 Philadelphia Atlas* (held by the Athenaeum of Philadelphia; accessed through PhilaGeoHistory); Insurance Maps of the City of Philadelphia, Ernest Hexamer & Son, 1896, Vol. 16, Plate 300 (held by the Map Collection, Free Library of Philadelphia); Miller et al., 32.

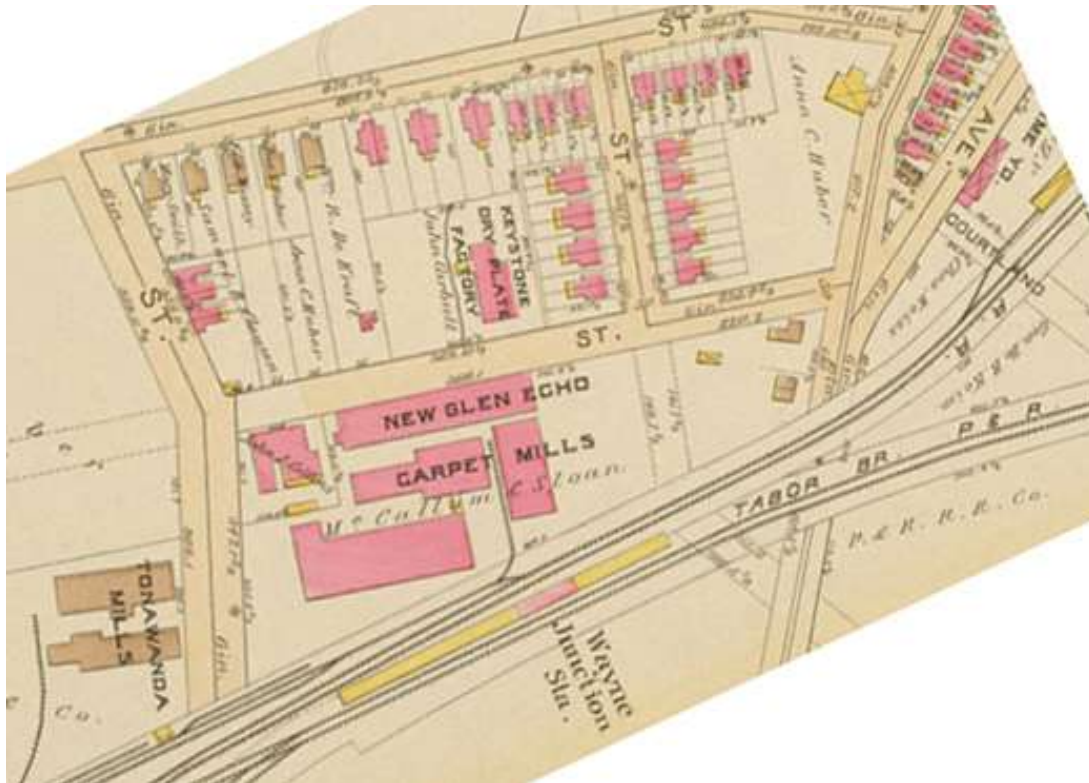


Figure 7. G.W. Bromley and Co. Atlas of the City of Philadelphia, Volume 7, 22nd Ward, 1889.

Early twentieth-century maps reflect a struggle to balance local residential “factory neighborhoods” with the industries that dominated the landscape.¹⁸ In 1908, a park and athletic hall existed southeast of the railroad on a block shared with two manufacturing businesses.¹⁹ By 1910, the park had been converted into a rail yard and the athletic hall was converted or rebuilt for use by one of the existing industries.²⁰ (Figure 8).

¹⁸ Miller et al., *Still Philadelphia*, 74.

¹⁹ Ernest Hexamer & Son, *Insurance Maps of the City of Philadelphia*, 1908, Vol. XVI.

²⁰ George Bromley, *Atlas of the City of Philadelphia*, 1910 (held by the Athenaeum of Philadelphia; accessed through PhilaGeoHistory).

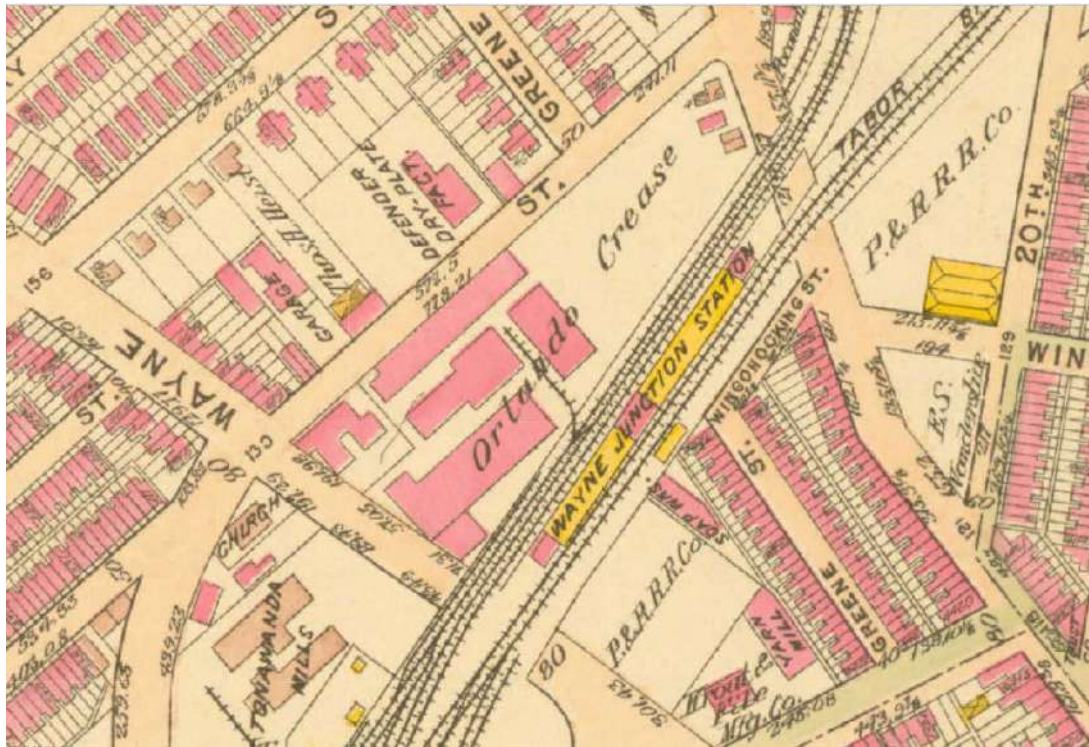


Figure 8. George Bromley, *Atlas of the City of Philadelphia*, 1910 (held by the Athenaeum of Philadelphia; accessed through PhilaGeoHistory).

Such alterations and additions were common in Wayne Junction. Local companies adapted to changing needs by demolishing buildings and constructing new ones. More often, though, they added storerooms, converted other buildings to new uses, and connected existing buildings.²¹

This industrial makeup remained largely the same through 1942 (Figure 9). Buildings received additions and individual companies were replaced by others, but the area and tenant composition appeared much the same, although there were some changes. Windrim Avenue was built between the Brown Instrument Company and the railroad tracks between 1934 and 1940.²² A new bridge from Windrim Avenue to Wayne Junction Station provided pedestrian access.²³

²¹ All the industrial properties are aggregate complexes dating from many different time periods.

²² J. M. Brewer, *Appraisal Map*, 1934; *Philadelphia Land Use Map*, 1942, Plans and Registry Division, Bureau of Engineering Surveys and Zoning, Department of Public Works, Federal Works Progress Administration for Pennsylvania (both maps held by the Map Collection, Free Library of Philadelphia; accessed through PhilaGeoHistory).

²³ A. D. Marble & Company, *Determination of Effect Report*, 54.

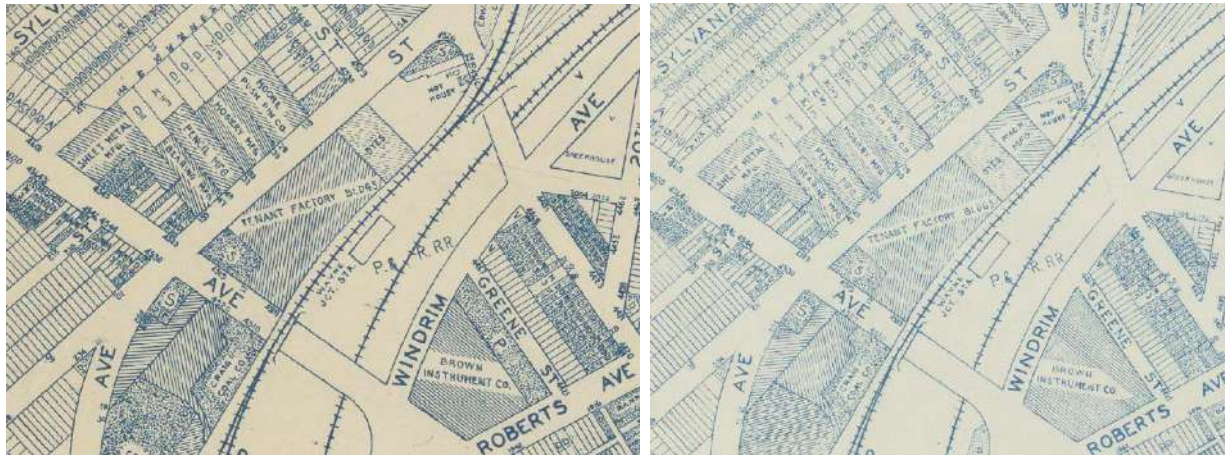


Figure 9. Federal Works Progress Administration maps from 1942 (left) and 1962 (right) show an area that changed little in twenty years. Source: Map Collection, Free Library of Philadelphia; accessed through PhilaGeoHistory.

Urban renewal projects changed on-the-ground factors with attempts to remedy a “long existing decline.”²⁴ Contemporary planners saw commercial development along Germantown Avenue threatened by new shopping centers outside lower Germantown/Nicetown, as well as the 1950s extension of the Roosevelt Expressway through Nicetown.²⁵ A 1965 urban renewal plan for Nicetown proposed to concentrate commercial development along Germantown Avenue, demolish housing along the new expressway, and create additional schools and recreational areas.²⁶ The Brown Instrument Company site was proposed to remain industrial, but other industries in residential areas were encouraged to relocate to other areas of the city.²⁷

The area has changed little since 1960 in its physical appearance, although most industrial tenants have moved their operations out of the urban area. Dense housing still surrounds the district, and its centerpiece of the train station and large mill complex are still in daily use. In the decades following urban renewal, local and national economic trends dramatically altered the landscape of this industrial node as manufacturers shut down or moved operations out of urban areas. Today, New Glen Echo Mills—now Wayne Mills—is the only functioning industrial building within the historic district boundaries. Moore Push-Pin moved its operations to Wyndmoor, Pennsylvania in 1977; its building is currently occupied by a health care servicer.²⁸ The Brown Instrument Company building was converted to a storage facility in 1988. One Arguto Oilless Bearings building is vacant, and another is currently used by a church. Max Levy Autograph moved to an industrial park in Northeast Philadelphia in 2007, leaving

²⁴ *Nicetown Redevelopment Area Plan*, Philadelphia City Planning Commission (October 1965), 15.

²⁵ *Ibid*; *Nicetown Urban Renewal Area Technical Report*, prepared by Hassinger and Schwam for the Redevelopment Authority of Philadelphia (June 1965), 3.

²⁶ *Nicetown Redevelopment Area Plan*, 15, 19-21.

²⁷ *Nicetown Redevelopment Area Plan*, 22-23.

²⁸ “History of the Moore Push-Pin Company,” <http://www.push-pin.com/mpphist1.html> (accessed May 12, 2010).

its building vacant, which has recently started to be rehabilitated into residential use.²⁹ The site once occupied by Van Straaten & Havey (demolished by the City in 2012) and the Blaisdell Paper Pencil Company also sit vacant.

Criteria G and J

The Wayne Junction Historic District is significant under Criteria G and J, both as a distinctive industrial area which should be preserved for its ties to Philadelphia's manufacturing history, and as an intact industrial area that exemplifies the economic heritage of the neighborhood and the City.

Industrial manufacturers in Philadelphia can be divided into three types of factories: workshops, mills and plants. The cluster of industrial producers at Wayne Junction are primarily workshops, which served as incubators for new ideas, products and services. These businesses tended to stay small and focus on the manufacture of a specialty product, for example, the manufacture of push-pins and map tacks at Moore Push-Pin, or the production of wood ball bearings at Arguto Oilless Bearing Company.³⁰ Philadelphia workshops became the national leader for the manufacture of fine industrial instruments, and these smaller companies were typically family-owned and managed. Some, like the Brown Instrument Company, developed into large-scale producers of electrical instruments, but generally the workshops stayed small and focused on the manufacture of specialized products.³¹ Workshops often were built adjacent to mills and plants, in order to sell their specialty industrial goods or services.³² It is likely that the smaller workshops on Berkley Street utilized their strategic location next to New Glen Echo Mills to support their business, as New Glen Echo Mills was unusual in that all aspects of production took place in one location. This was likely an asset for Van Straaten & Havey, manufacturers of silk yarns, which built a factory directly across the street from the mill complex, at 133 Berkley Street, in 1919. This building, which had been vacant for many years, was declared imminently dangerous and demolished by the City in 2012. Hosiery mills such as Van Straaten & Havey would have sent out their goods to dyers, and bought their knitting yarns from local producers that spun cotton and wool, such as New Glen Echo Mills. This specialization was a characteristic that distinguished textile production in Philadelphia from other regions such as New England.³³

²⁹ *NE Times*, Nov. 10, 2005, qtd. in Harold E. Spaulding, "Max Levy Autograph," <http://www.workshopoftheworld.com/germantown/levy.html>.

³⁰ Philip Scranton and Walter Licht, *Worksights: Industrial Philadelphia, 1890-1950* (Philadelphia: Temple University Press, 1986), 18.

³¹ Scranton and Licht, 40.

³² Scranton and Licht, 18-19.

³³ Scranton and Licht, 120.

Innovative Manufacturers at Wayne Junction

Several industrial businesses that operated out of Wayne Junction were led by pioneers in the field. These new and innovative products made Wayne Junction a center for significant industrial manufacturing. These companies included the Blaisdell Paper Pencil Company, Keystone Dry Plate & Film Works, Moore Push-Pin, Max Levy Autograph, the Brown Instrument Company, and William Scholes and Company, a tenant in the New Glen Echo Mills complex. It appears that nearly all of these manufacturers utilized their Wayne Junction factories as their sole business location, and the strategic choice of location at Wayne Junction was due primarily to the close proximity to the railroad.

The Blaisdell Paper Pencil Company manufactured self-sharpening pencils out of its Wayne Junction factory at 137-145 Berkley Street. The company was founded circa 1893 by Frederick E. Blaisdell, who patented the self-sharpening pencil the same year. These enormously popular pencils were the kind that could be sharpened by peeling away the thin paper around the graphite (referred to as a “china marker” today). Originally a tenant in the New Glen Echo Mills complex across the street, the Blaisdell Paper Pencil Company moved into the Berkley Street workshop by 1914. While in the building at Wayne Junction during World War I, Blaisdell Paper Pencil Company developed several needed advancements. The company was first asked by the Red Cross to create a skin-marking pencil that could be used by medical professionals who were treating soldiers overseas. Previously, the country’s supply had come from Germany, but the United States needed to create its own skin marking pencils, with the relationship between Germany and the United States during this period. The Blaisdell Paper Pencil Company went to work creating such a pencil, one that was also free of imported materials, and was able to supply the Red Cross with the much-needed medical supplies quickly. The Blaisdell Paper Pencil Company was also called on to create a pencil that would write on glass that would then be heated and have the marking remain. The company succeeded in creating this pencil (formerly only manufactured in Germany) and it was of great use to scientists and laboratory researchers.³⁴

In the Keystone Dry Plate & Film Works workshop at 113-129 Berkley Street, founder John Carbutt was the first experimenter of dry-plate technology used to make faster x-ray exposures. He produced the first commercial x-ray plates in the world in 1896 out of his Wayne Junction workshop, and in 1897 he invented and patented a film spool that was intended to “provide more convenient spools for the ribbon

³⁴ William Bradford Williams, “How the Lead Pencil Made Its Mark in the World War,” in *Munitions Manufacture in the Philadelphia Ordnance District*, (Philadelphia: 1921), 325-326.

films used for series pictures.”³⁵ Carbutt had founded the Keystone Dry Plate & Film Works in 1878 and erected his Wayne Junction factory in 1884-1885 in order to expand his business. The Wayne Junction workshop was considered one of the largest and best equipped facilities of the time, and Keystone Dry Plate & Film Works products were used both nationally and internationally. Prior to his move to Wayne Junction, Carbutt introduced the first mass-market dry plates in the United States, known as the Keystone Rapid Gelatine Plates. He continued to produce these dry plates throughout the 1880s in his Wayne Junction factory.³⁶

The Moore Push-Pin Company occupied the former Keystone Dry Plate & Film Works building from 1912 through 1977. The company was founded by Edwin Moore, who invented the push-pin and started manufacturing the “pin with a handle” for the trade in 1900. Although his first orders were small, he eventually received a \$1,000 order from Eastman Kodak Co. This gave Moore enough money to continue his production of push-pins and to start advertising his product.³⁷ While at his Wayne Junction workshop, Moore developed new sizes and appearances of the push-pins, and by the 1920s Moore Push-Pin produced three hundred styles of push-pins. Also at his Wayne Junction workshop, Moore invented new items, such as map tacks and the “push-less hanger.” This is what we know today as a standard picture hanger, with a U- shape to hold the picture frame wire.³⁸ A painted “Moore Push-Pin” sign remains visible on the side of the main building.

Max Levy Autograph, Inc., located at 212-220 Roberts Avenue, was a photoengraving business founded by brothers Louis Edward and Max Levy in 1875 in Baltimore. Max Levy Autograph moved to its Wayne Junction location in 1902. It was a well-established company by that time, and was called upon to develop several advancements for World War I. In the Wayne Junction workshop, the company invented a chamber accurately cut into glass plates, where cells of blood samples could be isolated and counted under the microscope. This device was adopted by the United States for testing blood of recruits in 1917-18, and the Franklin Institute bestowed a medal to Max Levy for this contribution.³⁹

³⁵ Peter E. Palmquist and Thomas R. Kailbourn, *Pioneer Photographers from the Mississippi to the Continental Divide: A Biographical Dictionary 1839-1865* (Stanford: Stanford University Press, 2005), 147; *U.S. Patent and Trademark Office Patents, 1790-1909* [database on-line], Ancestry.com. Patent #594.458, 254-5.

³⁶ “The Carbutt Dry Plate and Film Company,” *The Photographic Times-Bulletin* Vol. XXXIV (The Photographic Times-Bulletin Publishing Association, 1902), 285 (Google Books).

³⁷ John Bartlett, Frank Chambers, and Francis Stapleton Chambers, ed., “Death of Edwin Moore, President of the Moore Push-Pine Co., Philadelphia,” *Bulletin of Photography*, Volume 18, (Philadelphia, PA 1916), 409.

³⁸ Scranton and Licht, *Worksights: Industrial Philadelphia*, 41, 43.

³⁹ “In Memoriam: Max Levy, 1857-1926,” editorial by Myron D. Edmonds, 1926 (Held by the Center for Advanced Judaic Studies, Philadelphia).

Military authorities also turned to Max Levy for the engraving of scales on the lenses of field glasses.⁴⁰ Prior to the relocation to Wayne Junction, Max Levy Autograph invented a new photochemical engraving process, which they called "Levy-type;" invented the engraved glass grating known as the "Levy line screen," which became universally used for producing half-tone photo engravings (1887); invented the acid blast, or etching machine (1897); and invented the etch-powdering machine (1901). Max Levy's business earned seven honors and medals all in quick succession for the company's inventions, including medals from the Franklin Institute and the Royal Cornwall Polytechnic, in addition to awards from international fairs.⁴¹ Max Levy's life work was described as follows:

*What the compass and telescope had been to navigation and astronomy, the Levy Screen was to the process of reproduction. Pictures became a universal language, on a basis available to all and for the use of all the factors of civilization.*⁴²

The Brown Instrument Company, located at 4433 Wayne Avenue, was founded by Edward Brown, an Englishman who immigrated to Philadelphia in 1857.⁴³ In 1859, Brown invented a carbon-rod instrument that measured temperatures in kilns and foundries—the first pyrometer in the United States.⁴⁴ The pyrometer enabled foundries to set and maintain the optimal temperatures for making high-quality iron and steel, thereby reducing the potential for flawed product. The Brown Instrument Company moved to Wayne Junction in 1914.⁴⁵ There, the company felt sure of having "the most up-to-date facilities for manufacturing instruments of precision."⁴⁶ It was at the Wayne Junction factory that Brown Instrument Company continued to be innovative in the field of industrial measurement and control instruments, in addition to control and automation systems for factories. These innovations included more advanced control systems for the oil and gas industries, in addition to the development of electromechanical devices to help automate factories before World War II.⁴⁷ In the 1950s, Brown Instrument Company used computers to produce more powerful modern control systems inspired by

⁴⁰ "In Memoriam: Max Levy, 1857-1926."

⁴¹ Levy family, "Business papers, 1888-1920 (bulk 1895-1920)," Archival/Manuscript Material, Hagley Museum and Library.

⁴² "In Memoriam: Max Levy, 1857-1926."

⁴³ 1900 United States Federal Census (Accessed through Ancestry.com).

⁴⁴ "Finding Aid for Brown Instrument Company Records (1925-1960)," processed by Todd Cohn, Hagley Museum and Library, 1; *Metallurgical and Chemical Engineering*, Vol. 9, October 1911 [monthly journal] (New York: Electrochemical Publishing Co.), 559 (Accessed through Google Books).

⁴⁵ "Among the Manufacturers," *Steam* Vol. 13-14 (September 1914), 87 (Accessed through Google Books).

⁴⁶ "New Brown Instrument Factory," in *Metal Industry*, Vol. 12 (Metal Industry Publishing Co., October 1914), 525 (Accessed through Google Books).

⁴⁷ Walter Licht, *Getting Work: Philadelphia, 1840-1950* (Philadelphia: University of Pennsylvania Press, 1992), 2.

guided missile research.⁴⁸ By the mid-1950s, the company was producing analog computer systems capable of supervising an entire factory. These systems were used by corporations such as Procter and Gamble, Sun, Standard Oil, Seagram, General Electric, Shell, and the Atomic Energy Commission. This early work led to the development of the TDC 2000, “a digital process management system incorporating microprocessors,” in 1975.⁴⁹ Eight years later, an even more integrated control system was produced in the TDC 3000.

A modern researcher notes that Brown Instrument continued to innovate in the fields of industrial measurement and control instruments, and later with control and automation systems for factories:

*Brown Instrument Company had a major impact on the development of modern industrial production. From invention of the pyrometer to the advent of sophisticated measurement and control systems, Brown Instrument was instrumental in the creation of modern industrial automation.*⁵⁰

William Scholes and Company, a tenant in the New Glen Echo Mills complex at 4501 Wayne Avenue in the early 1900s, developed a new yarn made from tissue paper that was used for rugs on porches or kitchen floors around 1910 while working at his Wayne Junction mill. Scholes invented this new low-cost paper substitute due to the skyrocketing prices of wool around World War I. He used hundred-pound rolls of colored tissue paper that were slit into inch-wide strips and then humidified in order to make them more pliable. These were then shaped into a tight cord for the loom and weavers were able to use a Jacquard attachment to create elaborate patterns, creating carpets as large as nine feet across. Scholes was quite successful with his tissue paper invention, and went on to make bullion fringes from his Wayne Junction mill.⁵¹

Comparisons

Philadelphia’s former “workshop of the world” designation supports the historic importance of manufacturing to the city of Philadelphia. Many industrial neighborhoods emerged as a result of the City’s dominance in manufacturing. These industrial neighborhoods developed differently over time, and what follows compares the Wayne Junction Historic District to two other industrial neighborhoods in Philadelphia.

⁴⁸ Brown Instrument Company Announces Expansion Program,” *Hydrocarbon Processing* Vol. 27 (Gulf Publishing Co., 1948), 3.

⁴⁹ Ibid.

⁵⁰ Finding Aid for Brown Instrument Company Records (1925-1960),” processed by Todd Cohn, Hagley Museum and Library, 3.

⁵¹ Scranton and Licht, 123-124.

The Callowhill Industrial Historic District (NRHD, 2010), located to the north of center city, is significant for the diversified specialty manufacturing located in the district that characterized industry in Philadelphia during the nineteenth and twentieth centuries. This district is characterized by a concentration of workshops, similar to the Wayne Junction Historic District; however, it is a larger district than Wayne Junction in contributing building count, and includes residential buildings that were used as workmen's housing. Unlike the Callowhill Industrial Historic District, housing for the workers in the Wayne Junction Historic District was not intermixed with the factories. The Callowhill Industrial Historic District is similar to the Wayne Junction Historic District in its development and reliance on the railroad for the transportation of goods and passengers. The types of goods manufactured in these two districts, however, vary considerably. While the Callowhill Industrial Historic District had a concentration of automobile operations, printing and publishing, and light tenant manufacturing, the Wayne Junction Historic District does not have a theme of goods produced, but rather contained a wide variety of innovative manufacturers that ranged from textile production to light manufacturing.⁵²

The industrial neighborhood of Tacony, located in northeast Philadelphia, is another example of a factory town that relied on and grew because of the railroad, but also because of access to the Delaware River. Unlike Wayne Junction, the Disston Saw Works was a planned factory town from the 1870s that was meant to take advantage of the clean air and water available in Tacony. Other companies were soon attracted to the area because of the success of the Saw Works and the availability of skilled labor. These new factories included textile, glass, and iron works that required large factory buildings to produce their goods. Similar to Wayne Junction, the success of early companies and the strategic location near the railroad encouraged other businesses to construct factories in the area; however, Wayne Junction primarily contains workshops, whereas Tacony's Disston Saw Works was considered a plant, built outside of the city center where there was ample open space for development.⁵³

In conclusion, the Wayne Junction Historic District represents a significant industrial neighborhood in Philadelphia that housed innovative manufacturers that recognized the importance of the railroad for moving goods and materials in and out of the factories. As industrial companies located at Wayne Junction in the late nineteenth century and proved successful, others soon followed. These workshop owners and managers were primarily attracted to Wayne Junction because of the proximity of the railroad, and also because of the availability of land, workers, housing for those workers, and the

⁵² Callowhill Industrial Historic District nomination to the National Register of Historic Places, 2009.

⁵³ Scranton and Licht, 154-155; Workshop of the World, "Tacony," <http://www.workshopoftheworld.com/tacony/tacony.html> (accessed April 5, 2011).

proximity to the full-service New Glen Echo Mills. These companies demonstrated remarkable innovation for their time, with the majority of companies producing specialized products that advanced their fields of manufacturing on both small and large scales. The district is a distinctive industrial area in a City once known as the “workshop of the world,” and exemplifies the economic heritage of the neighborhood and the City.

For more detailed information about manufacturers and site development at Wayne Junction, please see Appendix A.

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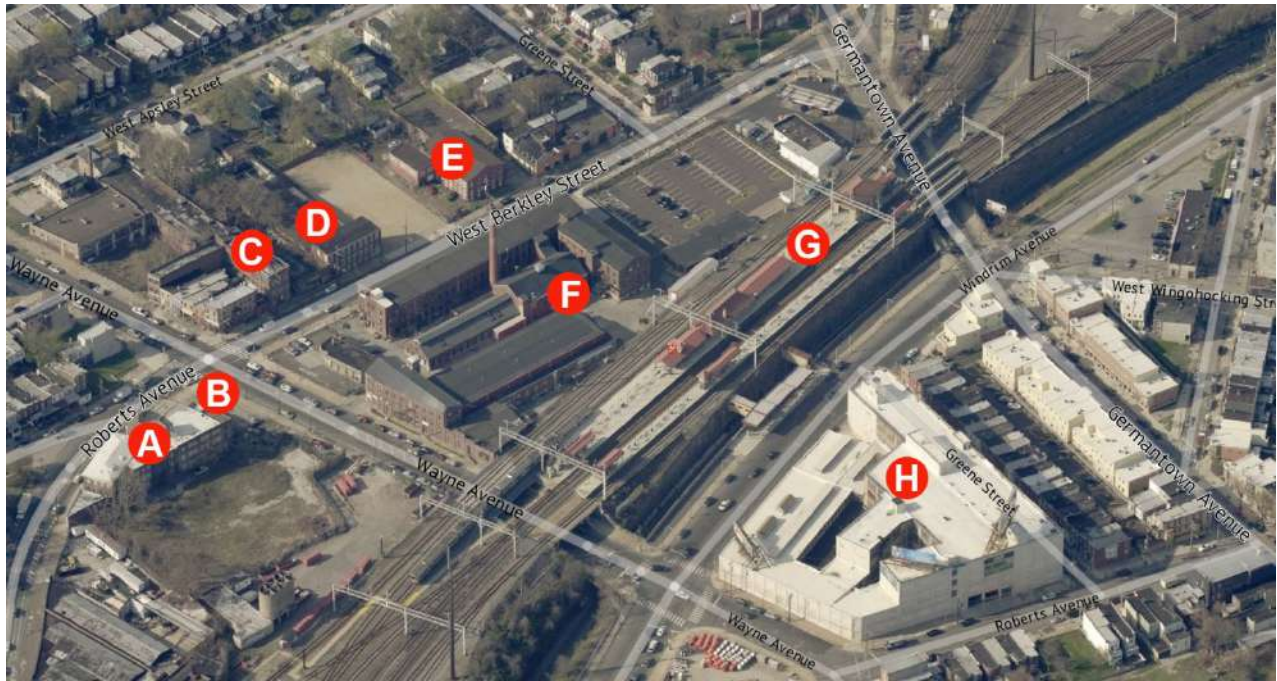
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Appendix A: History of Manufacturers and Site Development at Wayne Junction



(A) 212-220 Roberts Avenue, Max Levy Autograph

Site and Building History

In 1871, the subject property was undeveloped, and was part of a larger rural estate that spanned Wayne Avenue and belonged to J. S. and Anna C. Huber, who held extensive property in the area and lived off Wyoming (now Abbotsford) Avenue.⁵⁴ Tonawanda Mills and New Glen Echo Mills had been developed to the east by 1885.⁵⁵ In 1902, the site was developed when Max Levy Autograph moved to Roberts Avenue from Arch Street. A granite outcropping on the site provided seismic stability, an attractive prospect for Levy's offices and manufacturing operations.⁵⁶ The company's new brick and terra cotta building was designed by Carl P. Berger (Figure 10 and Figure 11).

⁵⁴ Hopkins, 1871 Atlas.

⁵⁵ Hopkins, 1885 Atlas.

⁵⁶ "About Us," Max Levy Online (<http://www.maxlevy.com/AboutUs.cfm>), accessed March 31, 2010.

Builders Appleton & Burrell have been awarded the contract for and have started work on the erection of an office building and laboratory, and a glass factory, on the east side of Roberts avenue, south of Wayne avenue, Wayne Junction, for Max Levy. The operation, it is stated, will cost about \$20,000. The plans were made by Architect Carl P. Berger, and they show a three-story brick and terra-cotta office building and laboratory, to have a slag roof, and a one-story glass factory, 36x71.6 feet. The former will contain a machine shop, a general and two private offices, heating room, filing room and a coat room on the first floor; a filling and cutting room, sealing room, laboratory and a ruling room on the second, and a grinding and polishing room, etching room and a toilet room on the third floor. The factory will be equipped with engines and boilers.

Figure 10. The Philadelphia Inquirer, 22 January 1902, p. 11.



Figure 11. 1902 Max Levy Autograph building, designed by Carl P. Berger. Source: www.maxlevy.com/ABUS.html

As with other industrial sites in Wayne Junction, the buildings were added to or altered to suit the needs of the growing business. Multiple additions were constructed between 1913 and 1950, resulting in the extant complex of different yet stylistically complementary buildings.⁵⁷

Max Levy Autograph operated on Roberts Avenue until circa 2007, when it moved to an industrial park in Northeast Philadelphia.⁵⁸ The building is currently unoccupied, but has been acquired with the intention of conversion to residential use.

Max Levy Autograph

The Max Levy Autograph building is a contributing resource to the Wayne Junction Historic District. Max Levy was a pioneer in the fields of printing and photoengraving, particularly the half-tone process which is still in use today. Designed in the Beaux Arts Classical style, the building features symmetrical proportions and extravagant ornamentation characteristic of the style. The east addition is notable for echoing the ornamentation of the original building in a more restrained way.

Brothers Louis Edward Levy (1846-1919) and Max Levy (1857-1926) founded a photoengraving business in Baltimore in 1875. In 1877 they moved to Philadelphia and reorganized the firm as the Levytype Company. Here they introduced their invention, jointly patented on January 4, 1875, of a new photochemical engraving process, which they called "Levy-type." In 1887, Louis E. Levy, assisted by his brother, invented the engraved glass grating known as the "Levy line screen," which became universally used for producing half-tone photoengravings. This was of immense value to the field of graphic arts, and made newspaper illustrations possible. Other inventions followed, most notably the acid blast, or etching machine, in 1897, and the etch-powdering machine in 1901. In 1900 the firm was renamed the Graphic Arts Company, and the brothers added a printing and publishing department to their business.⁵⁹ Max Levy's business earned seven honors and medals all in quick succession for the company's inventions, including medals from the Franklin Institute and the Royal Cornwall Polytechnic, in addition to awards from international fairs. The First World War did not slow down Max Levy's business, as he invented a chamber accurately cut into glass plates, where cells of blood samples could be isolated and counted under the microscope. This device was adopted by the United States for testing blood of recruits in 1917-18, and the Franklin Institute bestowed another medal to Max Levy for this contribution. Military

⁵⁷ *Philadelphia Real Estate Record and Builders' Guide*, Vol. 28, No. 39, p. 629 (Sept. 24, 1913); Ernest Hexamer & Son, 1914; Sanborn Fire Insurance Map, 1924, Vol. 23, Sheet 2214.

⁵⁸ Schenk, Linny and Michael Parrington, Update to Spaulding, "Max Levy Autograph."

⁵⁹ Levy family, "Business papers, 1888-1920 (bulk 1895-1920)," Archival/Manuscript Material, Hagley Museum and Library.

authorities also turned to Max Levy for the engraving of scales on the lenses of field glasses.⁶⁰

Max Levy's life work was described as follows:

"What the compass and telescope had been to navigation and astronomy, the Levy Screen was to the process of reproduction. Pictures became a universal language, on a basis available to all and for the use of all the factors of civilization."⁶¹

Lionel and Howard Levy, Max Levy's nephews, purchased the firm in 1920 and ran it until 1965, when Edgar B. Coale took over.⁶² The company was incorporated as Max Levy Autograph, Inc. in 1984.⁶³ It moved to an industrial park in Northeast Philadelphia in 2007 and continues to produce equipment and products related to phototooling.⁶⁴

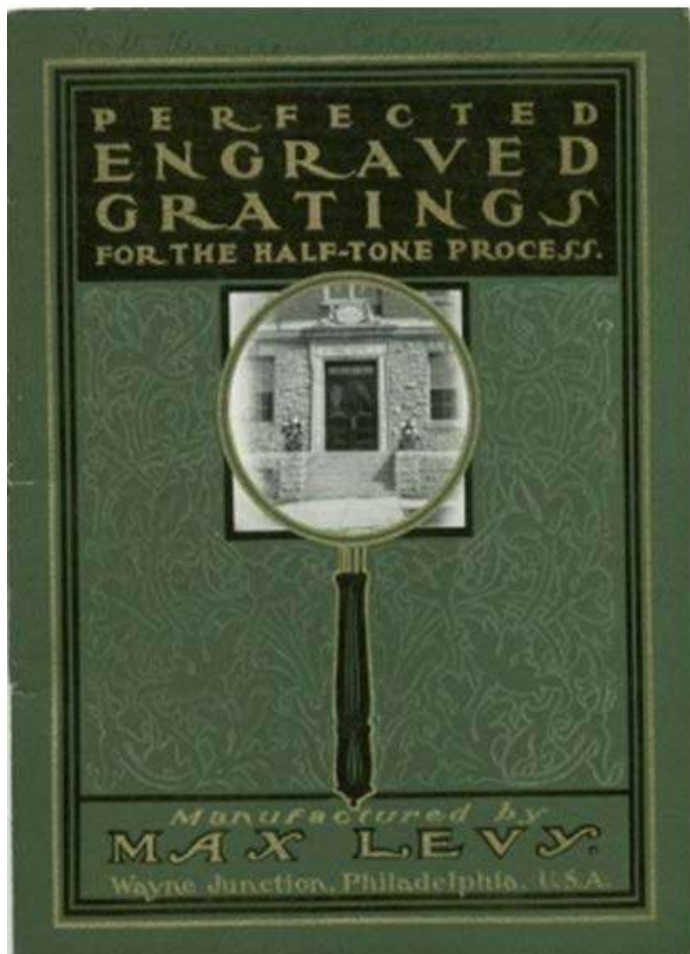


Figure 12. Cover of Max Levy Autograph informational book.
Source: <http://www.maxlevy.com/ABUS.html>

⁶⁰ "In Memoriam: Max Levy, 1857-1926."

⁶¹ Ibid.

⁶² Harold E. Spaulding, "Max Levy Autograph," Workshop of the World.

⁶³ "About Us," Max Levy Online.

⁶⁴ *NE Times* Nov. 10, 2005, qtd. in Spaulding, "Max Levy Autograph"; "About Us," Max Levy Online.

(C) 147-153 Berkley Street, Arguto Oilless Bearing Co.

Site and Building History

Arguto Oilless Bearing Company began operations in a garage on Berkley Street that was set back from the street. This one-story garage occupied the rear of the lot and was built between 1896 and 1908.⁶⁵ In 1910, the architectural office of Mellor and Meigs was awarded the contract to build a one-story “addition” that is now the building fronting Berkley Street⁶⁶ (Figure 13). The layout of the factory appears to remain the same through at least the 1920s. A pair of two-story rowhouses were immediately to the west of the factory, of which a corner can be seen in the circa 1910 photograph (Figure 13). By 1942, Arguto Oilless Bearings had significantly expanded their operations in Wayne Junction. Arguto now had two additional buildings as part of the works.⁶⁷ The two rowhouses had been demolished and a three-story brick masonry building was constructed in their place. This was used as a machinery shop by Arguto. The rear of the building contained a fire tower and was separated from the original building by a narrow alley. The rear of this new three-story building connected to a three-story converted rowhouse on Wayne Avenue, forming a 90 degree angle, or L-shaped connection. This Wayne Avenue building was used as a warehouse by Arguto.⁶⁸



Figure 13. Arguto Oilless Bearing building at 149 West Berkley Street, circa 1910. The building on the fear left was one of the two-story store houses that was demolished to build Arguto’s second building. Mellor, Meigs & Howe Collection, Athenaeum of Philadelphia (accessed via Philadelphia Architects and Buildings).

⁶⁵ Ernest Hexamer & Son, Insurance Maps of the City of Philadelphia, 1908, Vol. 16, Plate 301 (held by the Map Collection, Free Library of Philadelphia).

⁶⁶ “Arguto Oilless Bearing Company Factory, Project Chronology,” Philadelphia Architects and Buildings (PAB) www.philadelphiabuildings.org.

⁶⁷ Philadelphia Land Use Map, 1942, Plans and Registry Division, Bureau of Engineering Surveys and Zoning, Department of Public Works, Federal Works Progress Administration for Pennsylvania (held by the Map Collection, Free Library of Philadelphia; accessed through PhilaGeoHistory).

⁶⁸ 1958 Sanborn Insurance Map, Vol. 23, Sheet 2222.

Determined to gain more space, after a request to demolish the apartment building behind the factory was not granted by the City, Arguto obtained permission to demolish the row house attached to the North wall of the Wayne Avenue warehouse in 1969. The plan was to build a new factory building that would attach to the existing Wayne Avenue building, however this never happened and the lot remains vacant today.⁶⁹ Arguto Oilless Bearing Company remained in operation at 147-153 Berkley Street through at least 1978.⁷⁰ The parcel containing the three buildings was purchased by The Original Church of God in Christ, Inc. in 1983. The one-story building remains vacant and in poor condition. The three-story building next to it is used by a church, and the three-story building on Wayne Avenue is occupied and also owned by the church.

Arguto Oilless Bearing Company

The Arguto Oilless Bearing Company buildings are contributing resources to the Wayne Junction Historic District. The Philadelphia-based architecture firm of Mellor & Meigs designed the one-story building fronting Berkley Street circa 1910. The architecture firm had been founded just several years earlier, and both Walter Mellor and Arthur I. Meigs were from the office of T.P. Chandler, a prominent Philadelphia-based architect. The firm of Mellor & Meigs was a highly successful early twentieth-century firm known for residential and club designs. Designs included the Princeton Charter Club (Princeton, NJ), alterations to the Pickering Hunt Club (Phoenixville, PA), collegiate buildings for Haverford College, and residences developed by the Lower Merion Realty Co.⁷¹ The Arguto Oilless Bearing Company demonstrated how rowhouse-style buildings could contribute to the industrial works, by using two row houses for storage and manufacturing. On a larger scale, the Arguto Oilless Bearing Company occupied this site for approximately seventy years and contributed to Wayne Junction, an intact industrial area that exemplifies the economic heritage of the neighborhood and the city of Philadelphia.

Arguto oilless bearings were used “in friction or loose pulleys, on shaft bearings, in friction clutch pulleys, on countershafts”... and were “applicable to light or highspeed machinery where lubricants are undesirable but not for heavy work.”⁷² The oilless bearings were made of chemically-treated wood and did not require oil or any other lubricant. The company claimed that risk of fire was reduced by using Arguto oilless bearings, and that it had been stated by insurance experts that one-third of fires in industrial buildings were due to hot boxes and spontaneous combustion due to grease, lint, etc. Arguto

⁶⁹ Petition of Appeal #3412-K, 9/23/1969.

⁷⁰ Zoning Permit Application #91933, 7/7/1978.

⁷¹ Sandra L. Tatman, “Biography from the *American Architects and Buildings* database: Mellor & Meigs (fl. 1906- 1916 and 1928-1941). http://www.philadelphiabuildings.org/pab/app/ar_display.cfm/27099.

⁷² *Machinery* Vol. 9, Lester Gray French, ed. (Machinery Publications Corp., January 1903), 188.

Oilless Bearings was awarded a gold medal at the Jamestown Tercentennial Exposition, Virginia, in 1907. Arguto oilless bearings were referred to as “mechanical peace makers – nothing striking to look at, but make a good showing in your repair account” by the company.⁷³ The company was run by Norman Mellor, Norman Mellor, Jr., James M. Mellor, and H. Clay Mellor, co-partners.⁷⁴ It is likely that they were related to Walter Mellor, of Mellor & Meigs, and would explain why the architects designed the small industrial building, which is unlike most of their work.



Figure 14. Arguto Oilless Bearing Company advertisement. Source: The Journal of the Engineers' Club of Philadelphia, Volume XXXVII, February 1920, p. i.

⁷³ Arguto Oilless Bearings catalog, (Philadelphia: Arguto Oilless Bearings Company, 1913), 5-6, 24-5, 30.

⁷⁴ Deed, James M. Mellor to The Original Glorious Church of God in Christ Inc., for 149 W. Berkley Street, 10/20/1983.

(D) 137-145 Berkley Street, Blaisdell Paper Pencil Company

Site and Building History

In 1885, a frame carriage house, stable and dwelling occupied the land where the Blaisdell factory would soon be constructed. These small buildings shared the block with John Carbutt's Keystone Dry Plate & Film Works, and remained until at least 1896.⁷⁵ In 1903, the carriage house was removed and a two-story brick building was constructed for The National Tool & Stamping Company. There was a one-story iron clad hardening room in the rear yard.⁷⁶ By 1914, a long one-story brick building with wooden posts, a concrete floor and a row of small skylights was built as a rear addition to the building fronting Berkley Street. Blaisdell Paper Pencil Company now occupied these buildings, having moved from a tenant manufacturing building across the street at Glen Echo Mills. This production shed included a painting room and had windows on all sides. It connected to the original building via a one-story walkthrough. Blaisdell Paper Pencil Company continued to occupy the site until at least 1942.⁷⁷ By 1950, the Macbeth Arc Lamp Company was the new occupant of the buildings. The original building was used as offices and the production shed was used as a machinery shop.⁷⁸ The Macbeth Arc Lamp Company continued to operate out of this location until 1989.⁷⁹

Blaisdell Paper Pencil Company

The Blaisdell Paper Pencil Company building is a contributing resource to the Wayne Junction Historic District. Frederick E. Blaisdell patented the self-sharpening pencil in 1893 and manufactured this enormously popular writing instrument in his Wayne Junction factory. The pencil was so well-received that the Blaisdell Paper Pencil Company was called on to supply pencils for the government and army during World War I. To do this, they produced the United States' first skin-marking pencil and first glass-writing pencil, and made it so these products were not reliant on imported materials. The Blaisdell Paper Pencil Company building has contributed to Wayne Junction's industrial past as early as circa 1897, when the first building was constructed for The National Tool & Stamping Company. Since then, industry has built up around the factory, which remained in industrial use through 1989.

The Blaisdell Paper Pencil Company manufactured self-sharpening pencils out of its Philadelphia factory

⁷⁵ Hopkins, 1885 Atlas, Plate 15; Ernest Hexamer & Son, Insurance Maps of the City of Philadelphia, 1896, Vol. 16, Plate 301 (held by the Map Collection, Free Library of Philadelphia).

⁷⁶ There are multiple mentions in the Philadelphia Inquirer beginning in 1903 of National Tool and Stamping Company at this location; Ernest Hexamer & Son, 1908.

⁷⁷ Philadelphia Land Use Map, 1942.

⁷⁸ 1950 Sanborn Insurance Map, Vol. 23, Sheet 2222; 1958 Sanborn Insurance Map.

⁷⁹ *Business Firms Directory of the Delaware Valley* (Greater Philadelphia Chamber of Commerce for Penjerdel Council, 1989), 176 (Google Books); Deed from John L. Asher, Jr. and Carolyn K. Asher to Wayne and Leslie Bullock, for 137-145 Berkley Street, 6/7/1991.

and was founded circa 1893 by Frederick E. Blaisdell. These pencils were the kind that could be sharpened by peeling away the thin paper around the graphite (referred to as a “china marker” today). The company was first located on the top floor of a building in the Glen Echo Mills complex (Figure 15).⁸⁰ By 1914 the company had moved across the street into 137-145 Berkley Street. Prior to the war, Blaisdell Paper Pencil Company employed about 250 people; however, due to war efforts, employment doubled to about 500 workers.⁸¹

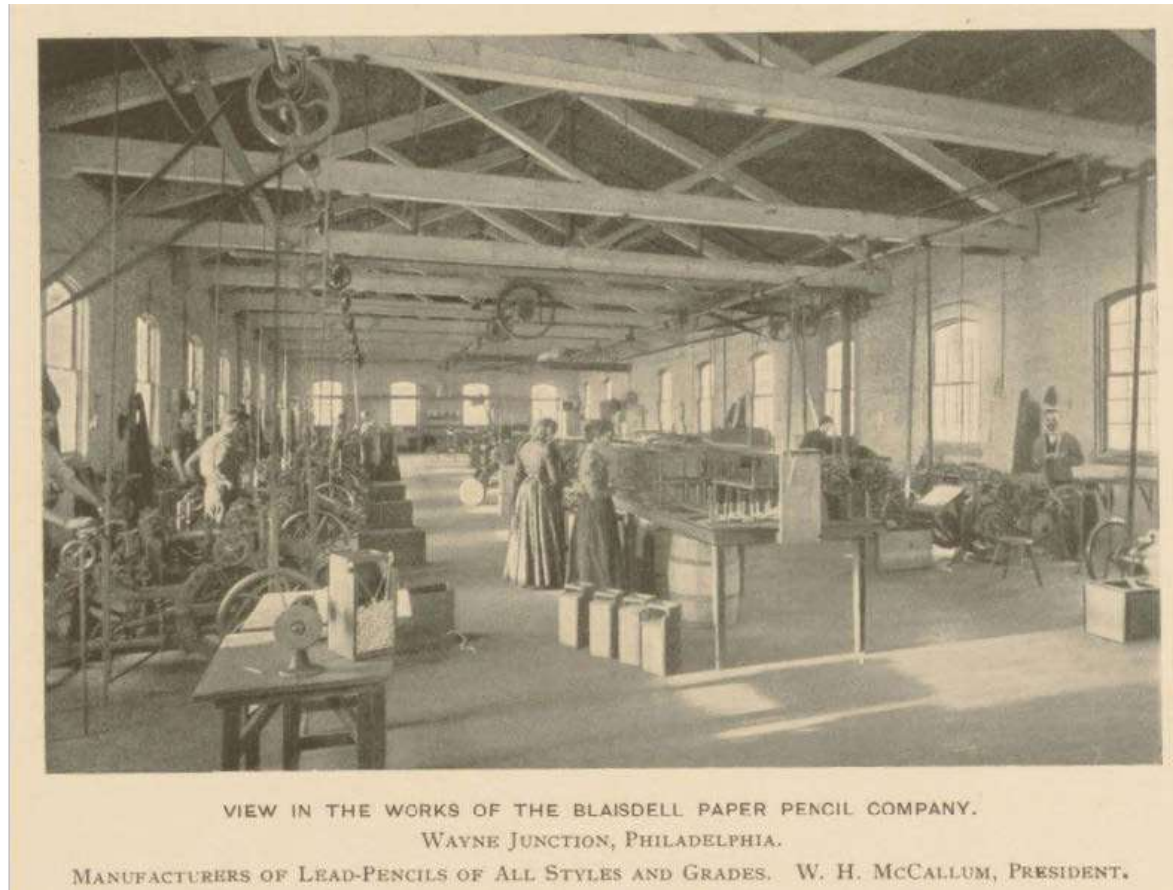


Figure 15. The Blaisdell Paper Pencil Company at the time when it was located in a Glen Echo Mills building, 1898-99. Source: Engelhardt, George Washington, *Philadelphia Pennsylvania, The Book of Its Bourse & Co-operating Bodies*, Philadelphia, Lippincott Press, 1898-99., 272.

World War I brought about new challenges for the Blaisdell Paper Pencil Company. The company was first asked by the Red Cross to create a skin marking pencil that could be used by medical professionals who were treating soldiers overseas. Previously, the country’s supply had come from Germany, but now the United States needed to create its own skin marking pencils. The Blaisdell Paper Pencil Company went to work and created such a pencil, one that was also free of imported materials (usually supplied by Germany), and was able to supply the Red Cross with the much-needed medical supplies within the quick

⁸⁰ Ernest Hexamer & Son, 1908.

⁸¹ “Tariff Schedules: Hearings Before the Committee on Ways and Means, House of Representatives,” Vol. 5, Schedules M and N (Washington: Government Printing Office, 1913), 5719 (Google Books).

timeframe allotted. The Blaisdell Paper Pencil Company was also called on to create a pencil that would write on glass that would then be heated and have the marking remain. The company succeeded in creating this pencil (formerly only manufactured in Germany) and it was of great use to scientists and laboratory researchers.⁸² The Blaisdell Paper Pencil Company remained in their Wayne Junction factory building until the 1940s.⁸³

When the Blaisdell Paper Pencil Company left its Wayne Junction location, the Macbeth Arc Lamp Company moved in. The Macbeth Arc Lamp Company was a manufacturer of printing lamps. In 1922, this company was located at 1524 Chestnut Street, Philadelphia.⁸⁴ In the 1940s, the company was located at 875 N. 28th Street, Philadelphia.⁸⁵ By 1950, Macbeth Arc Lamp Co. moved to 141 Berkley Street and remained there until 1989.⁸⁶



Figure 16. Blaisdell Paper Pencil Company advertisement. Source: <http://www.ipernity.com/doc/aemays/30055015>

⁸² William Bradford Williams, *Munitions manufacture in the Philadelphia Ordnance District*, Chapter XIII, "How the Lead Pencil Made Its Mark in the World War," (Philadelphia, 1921), 325-326.

⁸³ Philadelphia Land Use Map, 1942.

⁸⁴ "Fixtures – Gas and Electric, Lamps and Reflectors," *Fourth Industrial Directory of the Commonwealth of Pennsylvania* (J.L.L. Kuhn, 1922), 235 (Google Books).

⁸⁵ *The Inland Printer* (Maclean-Hunter Pub. Corp., 1940), 23 (Accessed through Google Books).

⁸⁶ *Business Firms Directory of the Delaware Valley* (Greater Philadelphia Chamber of Commerce for Penjerdel Council, 1989), 176 (Google Books); Deed from John L. Asher, Jr. and Carolyn K. Asher to Wayne and Leslie Bullock, for 137-145 Berkley Street, 6/7/1991.

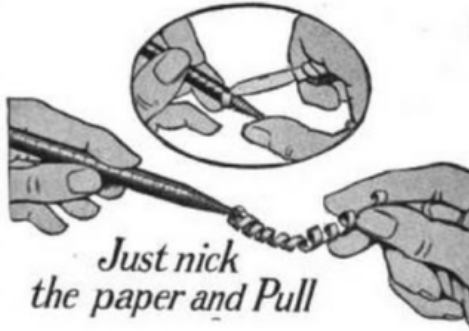
The Best Selling and most talked about pencils in the United States are

Blaisdell Paper Pencils



They are convenient and clean to use; there is no whittling, no waste—and they are more economical to use than wooden pencils. They outlast and outwear all other pencils.

The Blaisdell line includes regular lead pencils, colored pencils, indelible and copying.



We supply an
Importers' Sample Assortment

Containing 3 gross of pencils (an assortment of 10 kinds) for \$8. Delivered by parcel post prepaid anywhere.

We also offer an
Importers' Trial Assortment

Containing 16 gross of pencils (an assortment of 12 kinds) for \$25, f. o. b. New York, U. S. A.



Exclusive agencies will be granted to responsible importers or commissioners

BLAISDELL PAPER PENCIL COMPANY

Philadelphia, U. S. A.

Figure 17. Blaisdell Paper Pencil Company advertisement. Source: *American Exporter: A Monthly Journal of Foreign Trade*, v. 75 (Nov. 1914), 159 (Google Books).

(F) 113-29 Berkley Street, Keystone Dry Plate & Film Works, Moore Push-Pin

Site and Building History

In 1871, the land was undeveloped where John Carbutt's building would soon be constructed. There were no buildings on the block that faced onto Berkley Street. The 1871 Hopkins map shows a creek running through the property. By 1885, Carbutt had constructed his factory and the creek ran just to the west of the building.⁸⁷ The Keystone Dry Plate & Film Works factory, as it was named, was a two-story plus basement red brick factory, with window openings on all sides of both floors.

By 1890, Carbutt added several additions to both the rear and sides. Those on the rear included an engine room and a frame two-story addition. On the side, Carbutt added two single-story framed additions.⁸⁸ The layout of the Keystone Dry Plate & Film Works remained the same through 1896.⁸⁹ By 1908, Carbutt had passed away and the company was absorbed by Defender Dry Plate Company. Several more additions were added to the factory. To the rear of the engine room, a one-story iron clad room was added. A separate one-story building used as a storage room was constructed in the rear yard.⁹⁰

In 1912, Moore Push-Pin Company purchased the factory and shared it with the National Curtain Company by 1918. Moore Push-Pin occupied the first floor and National Curtain Company occupied the second floor. By this time, a one-story iron clad warehouse was built in the rear yard, next to the storage room but as a separate structure. Additionally, a one-story shipping room was built on the east side of the factory and opened into the main building. The early one-story rear addition was removed by 1918.⁹¹ By 1923, Moore Push-Pin occupied the entire factory building. The rear boiler room was enlarged and a smoke stack was added next to it. The frame additions on the west side were removed and a two-story addition was constructed.⁹² By 1950, Moore Push-Pin had significantly expanded by adding a one-story packing and shipping area attached to the northeast corner of the main factory building. This addition extended to the rear and side lot lines and essentially doubled the amount of the lot occupied by buildings. This new addition also absorbed the former shipping room, warehouse and storage room.⁹³

⁸⁷ Hopkins, 1885 Atlas; George W. and Walter S. Bromley, Atlas of the City of Philadelphia, 1889, Vol. 7, Plate 8 (philageohistory.org).

⁸⁸ Ernest Hexamer & Son, Insurance Maps of the City of Philadelphia, 1890, Vol. 16, Plate 301 (held by the Map Collection, Free Library of Philadelphia).

⁸⁹ Ernest Hexamer & Son, 1896.

⁹⁰ Ernest Hexamer & Son, 1908.

⁹¹ Ernest Hexamer & Son, Insurance Maps of the City of Philadelphia, 1918, Vol. 16, Plate 301 (held by the Map Collection, Free Library of Philadelphia).

⁹² Ernest Hexamer & Son, 1923.

⁹³ 1950 Sanborn Insurance Map; 1958 Sanborn Insurance Map.

The property was sold to Berkley Property L.L.C, the current owner of the building, in March of 2004.⁹⁴

Keystone Dry Plate & Film Works and Moore Push-Pin

The Keystone Dry Plate & Film Works and Moore Push-Pin building is a contributing resource to the Wayne Junction Historic District. John Carbutt, founder of the Keystone Dry Plate & Film Works, was a pioneer of mass-market dry plates for photography, and produced the first commercial x-ray plates in the world in his Wayne Junction factory.⁹⁵ Edwin Moore, who operated out of the factory beginning in 1912, was the inventor of push-pins, which he referred to as “a pin with a handle.” He then went on to patent picture hangers and map tacks, also manufactured out of the Wayne Junction factory.⁹⁶ John Carbutt’s choice of location for his factory undoubtedly was influenced by the close proximity to the railroad, availability of workman’s housing, and open space at that time. Other industries soon followed the lead of Carbutt, and Berkley Street between Greene Street and Wayne Avenue became an industrial headquarters.

Keystone Dry Plate & Film Works was founded and operated by John Carbutt. Carbutt emigrated from England to the United States in 1861 and opened a photography studio at that time in Chicago, where he produced cartes-de-visite (small portraits used as calling cards in the 19th century).⁹⁷ He became a prolific publisher of Western stereographic views while living in Chicago and was also the official photographer for several railroads.

In 1869, Carbutt decided to focus on printing and experimental photographic interests instead of studio and landscape photography. Carbutt sold his Chicago studio and moved to Philadelphia in 1870. In Philadelphia he became superintendent of the American Photographic Relief Company at 1002 Arch Street, but moved into a smaller facility when the current process with which he was experimenting proved to be too expensive. Carbutt was also the supervisor of the Photographic Hall at the 1876 Centennial Exhibition in Philadelphia.⁹⁸

In 1878, Carbutt officially started the Keystone Dry Plate & Film Works. It was considered one of the

⁹⁴ Deed between 113 Berkley Street Associates and Berkley Property LLC, 3/17/2004 (Held by the City of Philadelphia Department of Records).

⁹⁵ Peter E. Palmquist and Thomas R. Kailbourn, *Pioneer Photographers from the Mississippi to the Continental Divide: A Biographical Dictionary, 1839-1865* (Stanford: Stanford University Press, 2005), 147.

⁹⁶ “History of the Moore Push-Pin Company,” <http://www.push-pin.com/mpphist1.html>.

⁹⁷ Chicago Magazine, “Time Exposure,” December 2006, <http://www.chicagomag.com/Chicago-Magazine/December-2006/Time-Exposure/>.

⁹⁸ Palmquist, 146-7.

largest and best equipped facilities of the time, and Keystone Dry Plate & Film Works products were used both nationally and internationally.⁹⁹ In 1879 he introduced the first mass-market dry plates in the United States, known as the Keystone Rapid Gelatine Plates. He continued to produce these dry plates throughout the 1880s, and had the factory at Wayne Junction built in 1884 in order to expand his business production¹⁰⁰ (Figure 18). In the 1890s, Carbutt was the first experimenter of dry-plate technology used to make faster x-ray exposures. He produced the first commercial x-ray plates in the world in 1896, and in 1897 he invented and patented a film spool that was intended to “provide more convenient spools for the ribbon films used for series pictures.”¹⁰¹ Carbutt incorporated his company in 1902 so that his sons would be able to take over the business eventually.¹⁰² He died three years later, likely as a result of his working with x-rays.¹⁰³

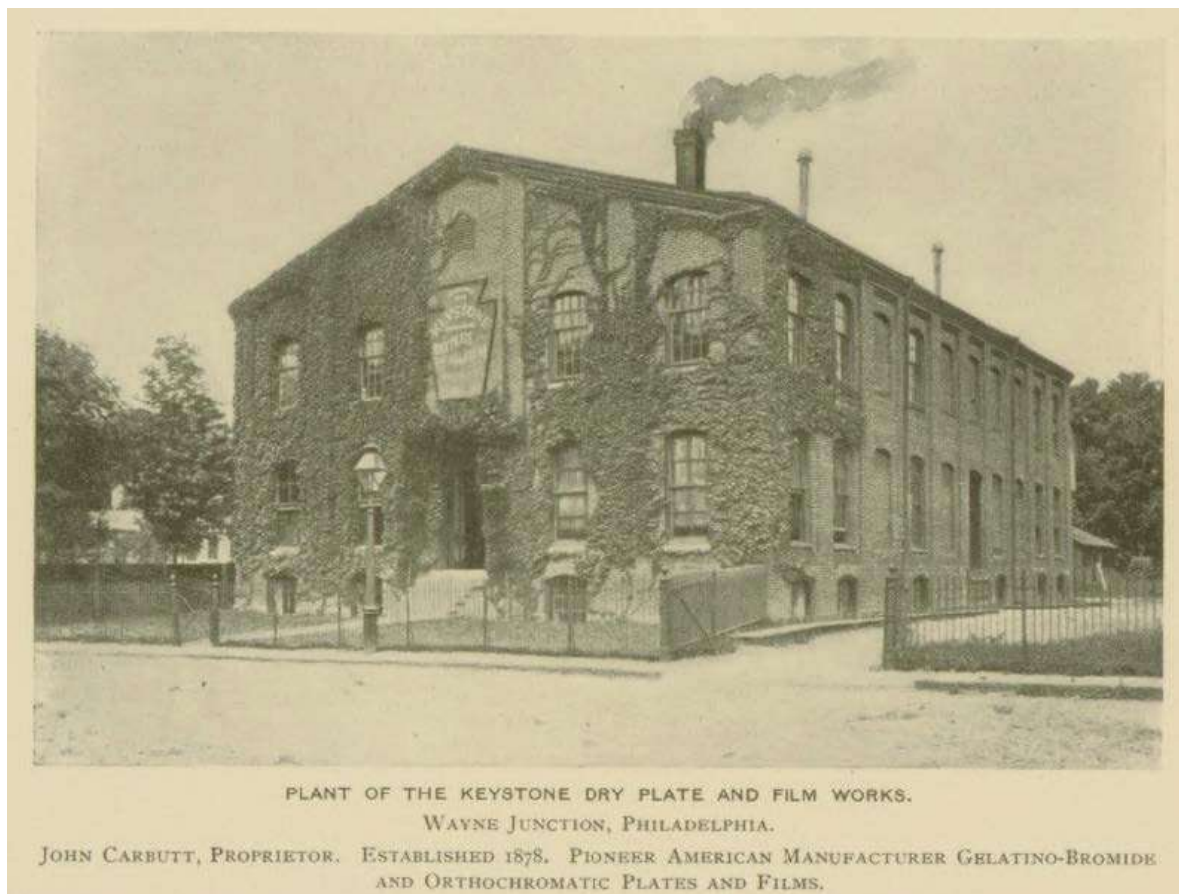


Figure 18. Keystone Dry Plate and Film Works, circa 1899. Source: Engelhardt, George Washington, *Philadelphia Pennsylvania, The Book of Its Bourse & Co-operating Bodies*, Philadelphia, Lippincott Press, 1898-99, p. 102

⁹⁹ “The Carbutt Dry Plate and Film Company,” *The Photographic Times-Bulletin* Vol. XXXIV (The Photographic Times-Bulletin Publishing Association, 1902), 285 (Google Books).

¹⁰⁰ “The Carbutt Dry Plate and Film Company,” 285.

¹⁰¹ Palmquist, 147; *U.S. Patent and Trademark Office Patents, 1790-1909* [database on-line], Ancestry.com. Patent #594.458, 254-5.

¹⁰² “The Carbutt Dry Plate and Film Company,” 285.

¹⁰³ Palmquist, 147.

By 1908, Keystone Dry Plate & Film Works had been absorbed by Defender Photo Supply Company, who operated out of the Berkley Street factory as Defender Dry Plate.¹⁰⁴ Defender Dry Plate occupied the factory until 1912, when it was bought by Moore Push-Pin Company.¹⁰⁵

Moore Push-Pin occupied 113-129 Berkley Street from 1912 through 1977. The company was founded by Edwin Moore from Northumberland, Pennsylvania. Moore invented the push-pin and started manufacturing the “pin with a handle” for the trade in 1900. His business was originally very small, and Moore would sell the push-pins the day after he had manufactured them, in order to have enough money to continue production. Although his first orders were small, he eventually received a \$1,000 order from Eastman Kodak Co. This gave Moore enough money to continue his production of push-pins and to start advertising his product.¹⁰⁶ The company continued to grow and was incorporated in 1904. The next few years saw even more growth for Moore Push-Pin Company, as Edwin Moore continued to invent new items to manufacture, including picture hangers and map tacks.¹⁰⁷ Edwin Moore passed away in 1916 due to severe illness, but the company continued to operate out of the Berkley Street factory until 1977.¹⁰⁸

The Moore Push-Pin Company is in operation today in a large facility in Wyndmoor, Pennsylvania. They still manufacture push-pins and similar small objects.¹⁰⁹

¹⁰⁴ David O. Whitten, *Manufacturing: a Historiographical and Bibliographical Guide* (Connecticut: Greenwood Press, Inc., 1990), 373 (Google Books).

¹⁰⁵ John Bartlett, Frank Chambers, and Francis Stapleton Chambers, ed., “Death of Edwin Moore, President of the Moore Push-Pin Co., Philadelphia,” *Bulletin of Photography*, Volume 18, (Philadelphia, PA, 1916), 409.

¹⁰⁶ *Ibid*

¹⁰⁷ “History of the Moore Push-Pin Company,” <http://www.push-pin.com/mpphist1.html>.

¹⁰⁸ Bartlett et al, 409.

¹⁰⁹ *Ibid*.

IMPORTANT NOTICE.

CARBUTT'S
Gelatino-Albumen Plates

FOR LANTERN SLIDES AND TRANSPARENCIES FOR WINDOW
DECORATION, BY CONTACT PRINTING OR IN THE
CAMERA, AND FOR REPRODUCING NEGATIVES
SAME SIZE OR ENLARGED.

Full Instructions with each Package of Plates.
Easy to work and results simply **PERFECTION.**

Special Lantern size, 3½ x 4, on thin Crystal Glass, 70 cts. per doz.
Other sizes at List Prices of **KEYSTONE DRY PLATES.**

With these PLATES and a

Carbutt Multum in Parvo Dry Plate Lantern
Patented April 25th, 1882.



Lantern arranged for making positives by contact.



Lantern arranged for developing, and after fixing, examining negatives by opal light.

A Photographer can add materially to his income.

SEE NOTICES IN PHOTOGRAPHIC JOURNALS.

Plates and Lantern can be obtained of any Dealer in Photographic Materials.

JOHN CARBUTT,
Keystone Dry Plate Works, Philadelphia.

SCOVILL M'FG CO., New York, General Agents.

Figure 19. Keystone Dry Plate and Film Works advertisement. Source: *Photographic Times and American Photographer* Vol. 13 (Scovill Manufacturing Company, Publishers, 1883), 5 (Google Books).



**The Scientific Way to
Hang Heavy Pictures**

Instead of the ugly nail or common
tack which is never safe, use

Moore Push-less Hangers

The Hanger with the Twist

The Hanger is flat against the wall; the pin is inserted on an angle, and the weight of the picture up to 100 pounds—is properly distributed. For light pictures, photos, etc., **Moore Push-Pins**—Glass Heads, Steel Points, are used by millions.

Suggest a use and we'll send samples free

Sold by Hardware, Stationery, Drug and Photo supply stores everywhere **15c per pkt.**

Moore Push-Pin Co., 11-6 Berkley St., Philadelphia



Figure 20. Production of Moore Push-less Hangers had to be curtailed during World War II because steel was in high demand for war efforts. The company's president asked customers in 1942 to please place their orders as soon as possible to ensure an adequate quantity.¹¹⁰ Source: *Popular Science*, p. 93, June 1921.

¹¹⁰ "Moore Points: Issued by the Moore Push-Pin Company, Wayne Junction, Pennsylvania," June 1942.

(G) 130 Berkley Street, New Glen Echo Mills

Site and Building History

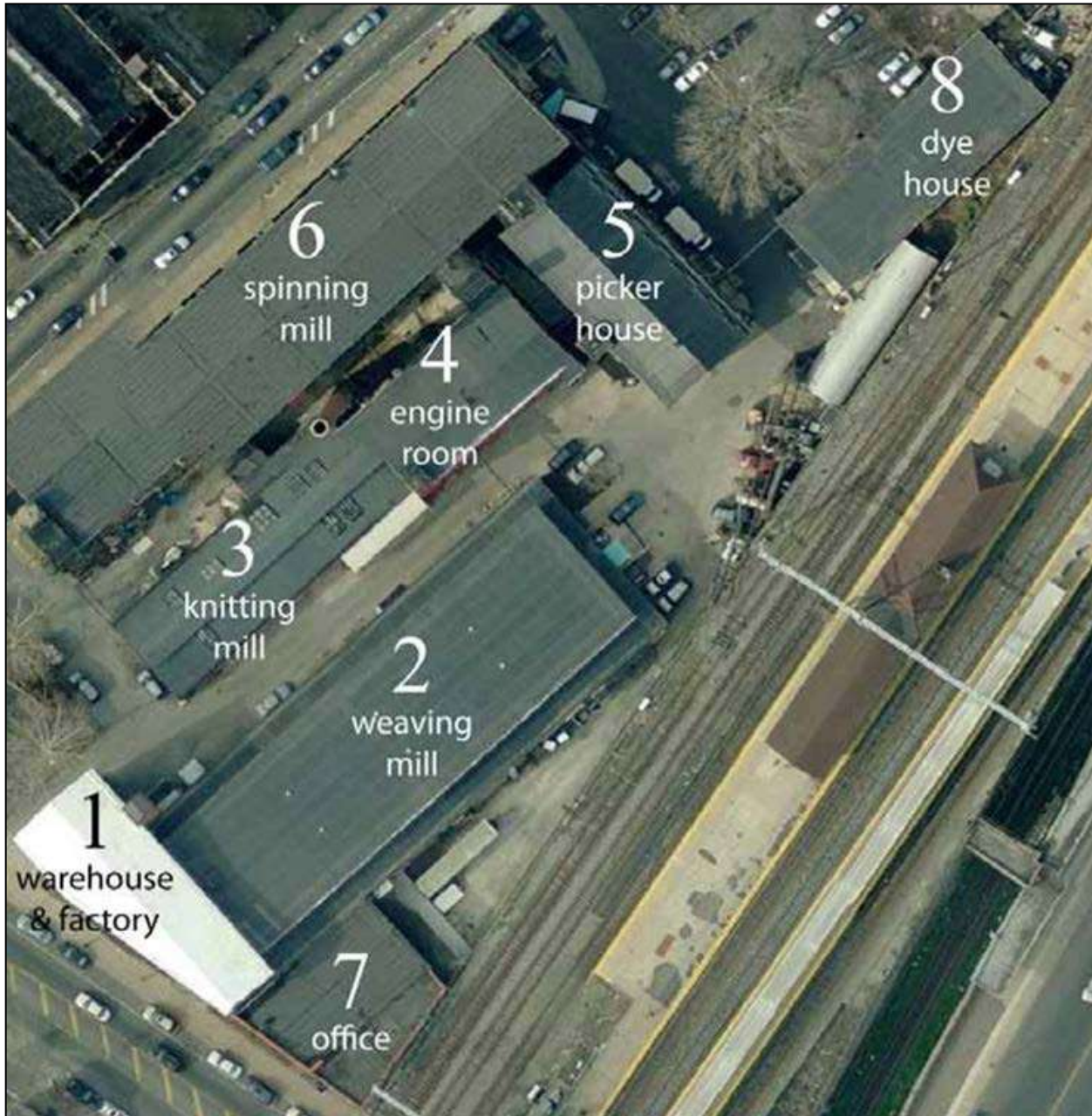


Figure 21. Aerial view of the New Glen Echo Mills complex. These numbers will be used throughout the rest of this section to refer to different buildings in the complex. Source: Pictometry International Corp., 3/25/2009.

An 1871 map shows the land where New Glen Echo Mills would soon stand was undeveloped, except for a silk mill on the corner of Berkley Street and Wayne Avenue.¹¹¹ By 1885, New Glen Echo Mills consisted of six buildings, shown as Buildings 1-6 in Figure 21.¹¹² Building 6 switched from carpet manufacturing to

¹¹¹ Hopkins, 1871.

¹¹² Hopkins, 1885.

tenant factories in 1900.¹¹³ Small additions were constructed in the early 1900s, and a one-story building (Building 7) was constructed circa 1910 for use as an office.¹¹⁴

In 1913, an ordinance was passed in Philadelphia “to authorize the revision of the lines and grades of Wayne avenue, from the Philadelphia and Reading Railway to Berkley street.” The purpose was to extend the width of the street to 80’ in a straight line from Berkley Street to the Philadelphia and Reading Railway bridge.¹¹⁵ It is likely that New Glen Echo Mills was instructed at this time to comply with the new street alignment. This meant that Building 1 was partially in the right-of-way. Between 1918 and 1924, this situation was remedied by removing part of the street façade of Building 1 and its addition, as seen when comparing 1918 and 1924 maps. This explains the unique building design of Building 1 that is present today (Figure 22). A circa 1885 photograph of Frank Furness’s station towers shows Building 1, before the Wayne Avenue façade was altered, in the lower left corner (Figure 23). The façade facing the railroad is identical to Building 5’s railroad-fronting façade. However, one can tell that the building in this photograph is Building 1 because of the smokestack behind it. That smokestack belonged to Building 4 (the engine/boiler room) but has since been removed and replaced with a different smokestack in 1946. Fortunately the evidence remains in aerial views of the engine room and it is clear that a smokestack – more square in design, matching that in the photograph – was on the south corner of the building. Today the smokestack is on the west corner of Building 4.

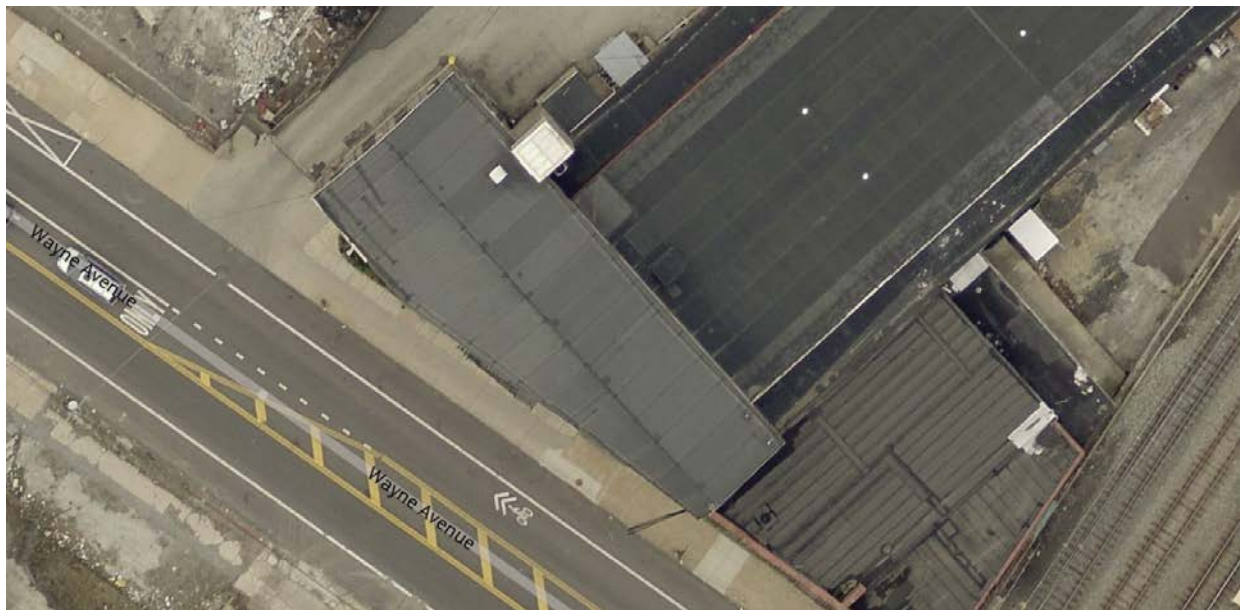


Figure 22. Building 1 and its addition were significantly altered after a 1913 revision of the lines of Wayne Avenue. Source: Pictometry 4/7/2018.

¹¹³ “C” Application for Zoning Permit and/or Use Registration Permit,” Estate of Orlando Crease, City of Philadelphia, Department of Licenses and Inspections, Application No. 86764F, 10/21/1960.

¹¹⁴ Bromley, 1910.

¹¹⁵ Ordinances of the City of Philadelphia, 1913, p. 183.



Figure 23. Frank Furness's 1881 station design with Building 1 in the lower left corner. A rare photograph, circa 1882, of Building 1 before it underwent significant alterations due to realignment of Wayne Avenue. Source: *The Reading Railroad*, by James L. Holton, p. 122.

Additions and alterations continued through the early to mid-1900s. Building 8, the dye house originally and yarn mill by 1950, was constructed at some time between 1924 and 1947.¹¹⁶ Building 8 is outside of the boundary of the historic district.

New Glen Echo Mills

The New Glen Echo Mills complex is a contributing resource in the Wayne Junction Historic District. The complex was one of the first developments built at Wayne Junction and utilized the close proximity to the railroad through the use of a rail spur. The complex occupies nearly an entire city block and aesthetically defines the northwest view from the Wayne Junction train station. The complex is also unique in that it remains as an active factory, now known as Wayne Mills. In 1920, New Glen Echo Mills was the second-oldest and one of the largest carpet factories in the United States, and enjoyed a reputation throughout the nation.¹¹⁷

¹¹⁶ 1950 Sanborn Insurance Map; Application for Zoning Permit and/or Use Registration Permit, Application #95265, Zoning Permit #28725, Use Registration Permit #28133, 1/7/1947.

¹¹⁷ "Old Glen Echo Mills: Demolished To Make Room for Building Improvements," n.d. (circa 1920) newspaper article, in "Industries, Graveyards, Firehouses," 1891, E.C. Jellett Scrapbook, 73 (held by Germantown Historical Society, Call No. L-1/24);

New Glen Echo Mills was established as Glen Echo Mills in 1830 by Scottish immigrants William and Andrew McCallum.¹¹⁸ The following year, the brothers purchased from James Burk a Germantown factory located on the upper end of Paper Mill Run on Carpenter Lane, originally built to produce soldiers' uniforms during the War of 1812. They began manufacturing ingrain carpets, or carpets woven so that the pattern appeared on both sides, and called their fledgling business Glen Echo Mills after an echo in the glen where it was located.¹¹⁹

The McCallums' "industry and thrift" soon brought success to Glen Echo Mills.¹²⁰ The mill's machines were powered by waterwheel power until 1835, when a steam engine, boiler, and another weaving room were built.¹²¹ Additionally expansion followed, and by 1850, Glen Echo Mills employed 250 people—a significant increase from the firm's initial 30 hands—and was the largest mill in the state and one of the largest in the country.¹²²

The Civil War hurt carpet sales considerably.¹²³ However, the firm obtained blanket looms and manufactured blankets for Union soldiers during the Civil War, operating round-the-clock with two sets of workers to meet demand.¹²⁴ After the war, production returned to several types of ingrain carpets and yarns.¹²⁵ The entire carpet industry was growing, and an award from the 1876 Centennial Exhibition congratulated Glen Echo Mills on leading the industry:

*"This house, now about completing a half century of existence, has grown with the growth of its particular industry, and with that of the State and country...In this specialty [ingrain carpets] the firm led the trade, producing the best carpets of this description which are known either here or in Europe."*¹²⁶

It was a sizeable vertically-integrated operation spread over two acres, and it produced about 1,500 yards of ingrain carpeting, yarns for in-house carpet manufacture, and 1,800 pounds of yarn for resale each

1891 newspaper article, in E.C. Jellett Scrapbook, 79 (held by Germantown Historical Society, Call No. L-1/24); "McCallum & Sloan"; Edwin T. Freedley, "Philadelphia and its Manufactures; A Handbook of the Great Manufactories and Representative Mercantile Houses of Philadelphia in 1867" (Philadelphia: Edward Young, 1867), 237-38.

¹¹⁸ "McCallum & Sloan," *Philadelphia and Popular Philadelphians* (Philadelphia: The North American, 1891), 119.

¹¹⁹ "McCallum's Mills," n.d. (circa 1920), in E.C. Jellett Scrapbook, 75; "McCallum & Sloan," 1891 newspaper article; "McCallum & Sloan," *Philadelphia*; "Ingrain," *Oxford English Dictionary* (Oxford University Press).

¹²⁰ "McCallum's Mills"; "McCallum & Sloan," *Philadelphia*.

¹²¹ *Ibid*; *The Awards and Claims of Exhibitors at the International Exhibition 1876* (Cambridge: National Association of Wool Manufacturers, 1877), 179-80.

¹²² *Ibid*; "Old Glen Echo Mills: Demolished"; "McCallum & Sloan," *Philadelphia*.

¹²³ "McCallum & Sloan," *Philadelphia and Popular Philadelphians*.

¹²⁴ "Old Glen Echo Mills: Demolished"; *The Awards and Claims of Exhibitors*.

¹²⁵ "McCallum & Sloan," *Philadelphia*; Freedley 237-38; *The Awards and Claims of Exhibitors*.

¹²⁶ *The Awards and Claims of Exhibitors*.

day.¹²⁷ Mill workers spun yarns from raw wool, dyed the yarns, and wove the carpets on over 100 looms, some of which operated by power. The scope of operations was reflected in the physical plant, which included areas for wool drying, picking, sorting, carding, spinning, and dyeing; winding, warping, spooling, and storing yarn; and carpet weaving (Figure 24).

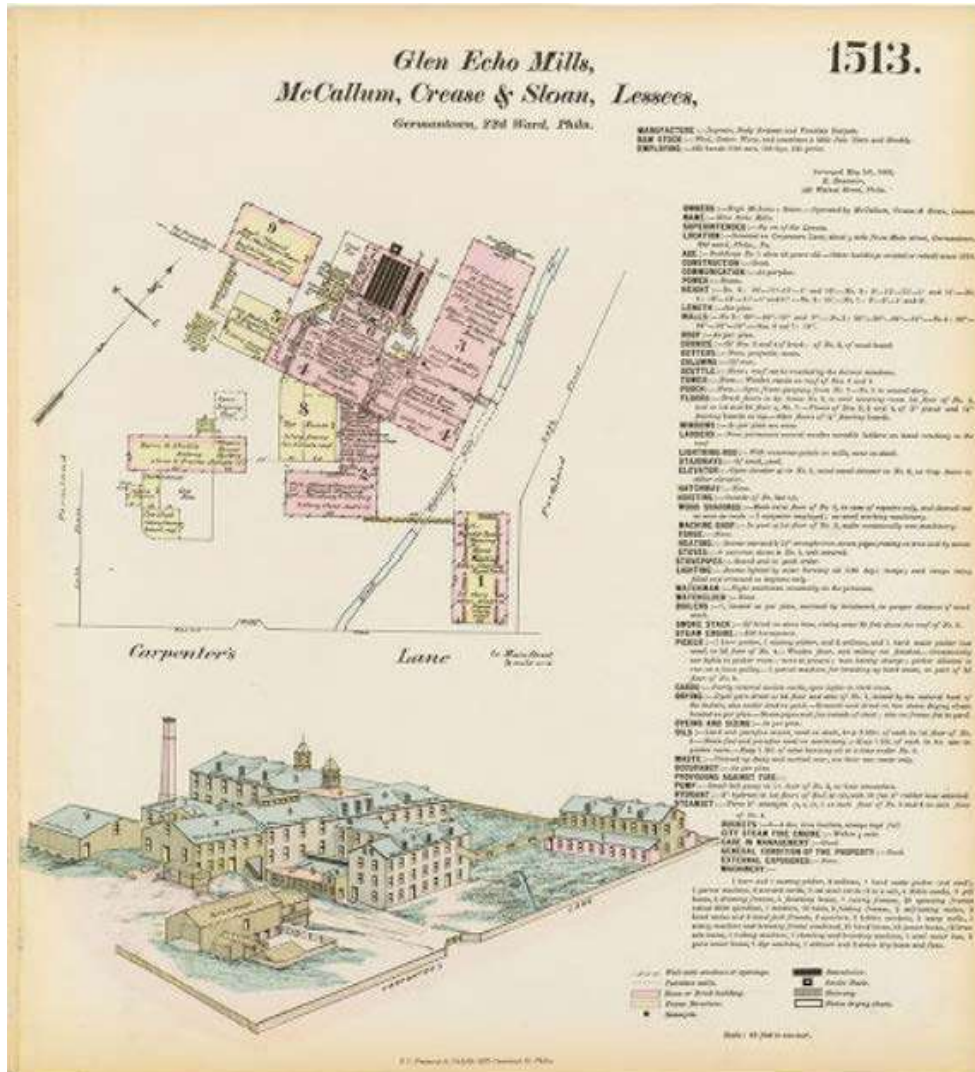


Figure 24. The original complex of Glen Echo Mills in Germantown. These buildings were demolished in 1920 in favor of residential development. Source: Hexamer General Surveys, vol. 16, plate 1513, 1880 (accessed through philageohistory.org)

Glen Echo Mills was a major employer in the area, consistently keeping “a large number of hands.”¹²⁸ At the time of the plant expansion, the mills employed 350 people—a 40 percent growth from 1850.¹²⁹ After 1875, the firm began using power looms to manufacture Brussels carpets, or carpets where the pattern appeared only on the upper surface.¹³⁰

¹²⁷ Ibid.

¹²⁸ “McCallum & Sloan,” Freedley 237-38.

¹²⁹ “McCallum & Sloan.”

¹³⁰ Ibid.; “Ingrain,” *Oxford English Dictionary* (Oxford University Press).

In 1885, the firm bought four and-a-half acres of land at Wayne Junction Station and constructed “one of the best appointed carpet mills in this country.”¹³¹ The new mills, known as New Glen Echo Mills, occupied almost an entire city block next to the railroad and included a spinning mill, picker house, boiler and engine house, dye house, warehouse, and weaving mill.¹³² The firm continued to be successful, though its pioneering days with power looms had passed. Its own products were well regarded, with “a reputation throughout the United States,” and it operated the city’s largest carpet importing and wholesaling business since 1841.¹³³ At the cusp of the 20th century, it boasted the distinction of being the oldest carpet manufacturing firm in Pennsylvania and the second-oldest in the United States.¹³⁴ Around 1920, New Glen Echo Mills was “among the largest carpet factories in the United States.”¹³⁵

The firm changed hands—and names—a number of times, though the mills themselves remained Glen Echo Mills (New Glen Echo Mills after 1885). Andrew McCallum died in 1855, and William McCallum formed a new firm, McCallum & Co., with his son Hugh McCallum, Orlando Crease, and William Sloan in 1859.¹³⁶ The property and buildings were sold in 1902 to Orlando Crease at a sheriff’s sale for \$100,000.¹³⁷ In 1976 the property was sold to Wayne Mills Co. for \$110,000.¹³⁸ Wayne Mills Co., Inc. was founded in 1910 and produces woven tapes, bindings, and webbings using a combination of modern technology and older machines.¹³⁹ Wayne Mills was operating out of Building 6 on the site by 1966 and purchased the entire industrial works in 1976.¹⁴⁰

¹³¹ “McCallum & Sloan.”

¹³² “Glen Echo Mills Change Hands,” n.d. (circa 1902) newspaper article, in E.C. Jellett Scrapbook, 77 (held by Germantown Historical Society, Call No. L-1/24).

¹³³ “McCallum & Sloan,” Freedley 237-38.

¹³⁴ “McCallum & Sloan.”

¹³⁵ “Old Glen Echo Mills: Demolished.”

¹³⁶ Ibid.

¹³⁷ “C” Application for Zoning Permit and/or Use Registration Permit,” Estate of Orlando Crease, City of Philadelphia, Department of Licenses and Inspections, Application No. 86764F, 10/21/1960; Harold E. Spaulding, “New Glen Echo Mills,” Workshop of the World (http://www.workshopoftheworld.com/germantown/glen_echo.html).

¹³⁸ Deed, Rachel Keator Crease to Wayne Mills Co., Inc., 1/26/1976 (Philadelphia Zoning Archive online).

¹³⁹ “About Wayne Mills Co., Inc.” Wayne Mills Co. (<http://www.waynemills.com/about.html>).

¹⁴⁰ Application for Use Permit #59482H, 7/13/1966; Deed, Rachel Keator Crease to Wayne Mills Co., Inc., 1/26/1976 (Both accessed through Philadelphia Zoning Archive online).

(H) 4433 Wayne Avenue, Wayne Junction Train Station

Site and Building History

The mid-1830s brought the railroad through Wayne Junction, and it was initially run by the Philadelphia, Germantown & Norristown Railroad, which ran between Philadelphia and Norristown. In 1870, the Philadelphia & Reading acquired this line and Wayne Junction became an important connector for downtown Philadelphia. The first factories began to locate near the train station.¹⁴¹

By 1871, the first train station, named “Wayne Station,” was constructed where the future Wayne Junction Station would stand.¹⁴² Philadelphia architect Frank Furness designed the next Wayne Junction station that was constructed in 1881. The station was rebuilt in 1901 with a Gothic Revival design by the Wilson Brothers and Company, a Philadelphia firm that designed many railroad stations in Philadelphia, Washington D.C., and Baltimore.¹⁴³ This station consisted of the main station building with a waiting room or headhouse on either side. Covering a majority of the platform was a wooden canopy, which connected all three buildings (Figure 25).¹⁴⁴

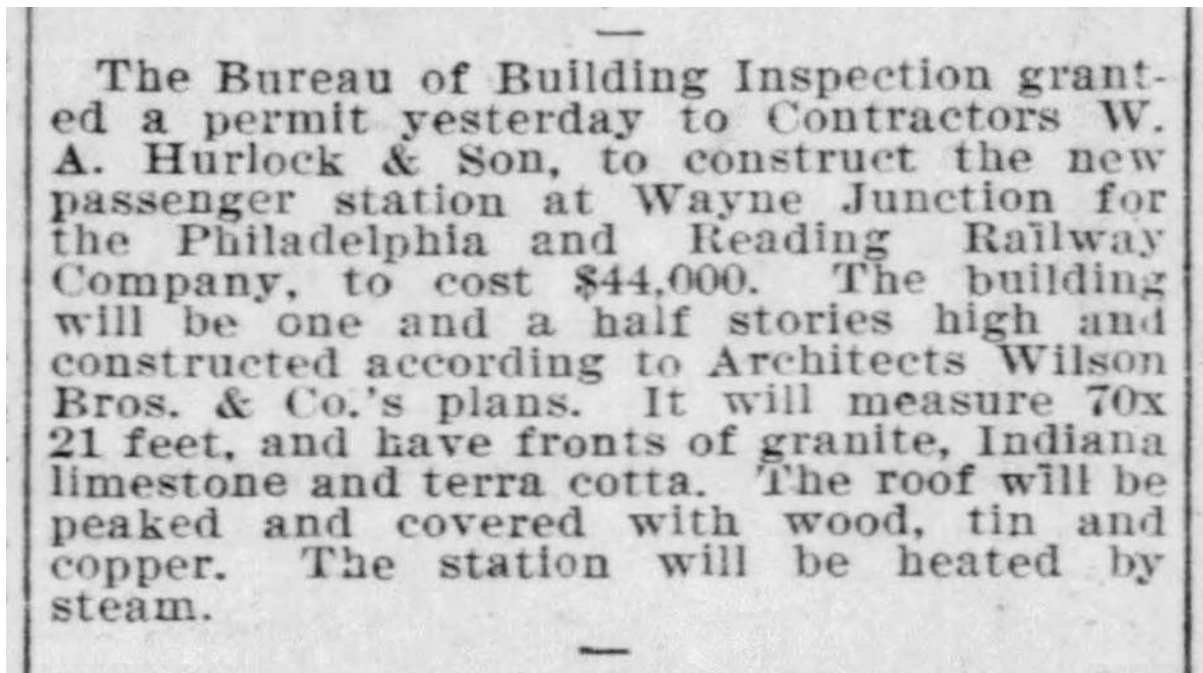


Figure 25. Newspaper clipping regarding permit secured for new station at Wayne Junction. Source: *Philadelphia Inquirer*, October 10, 1900, p. 9.

¹⁴¹ “Determination of Effect Report: Wayne Junction Station Improvement Project,” by A. D. Marble & Company for Urban Engineers, Inc., and Southeastern Pennsylvania Transportation Authority (September 2008), 54-55.

¹⁴² Hopkins, 1871.

¹⁴³ “Wayne Junction Station, Reading Railroad,” Philadelphia Historic Commission Register of Historic Places, April 1979.

¹⁴⁴ Ernest Hexamer & Son, 1908.

Between 1913 and 1914, a stone retaining wall was added between a newly-constructed depressed freight line and the raised passenger line. A reinforced concrete bridge was built over the low-grade line. Staircases leading from Wayne and Germantown Avenues were also constructed at this time so that passengers could access the elevated platform.¹⁴⁵

The new rail facilities served three groups: local residents, a growing cadre of commuters who changed trains at Wayne Junction to reach their destinations, and the increasingly varied factories that continued to locate and expand immediately around the station.¹⁴⁶ When the new freight line was completed in 1914, the area immediately around Wayne Junction Station held a diverse group of industries: a floral hothouse, a coal yard, two photographic supply companies, three metalworks companies, a pencil manufacturer, and several textile and hosiery firms.¹⁴⁷

In 1936, a second bridge for pedestrian access was added from Windrim Avenue, a waiting room addition was made to the station, and the canopies were rebuilt. This was also the time that the second headhouse, located near Wayne Avenue, was torn down. In the 1950s, the tile roof on the main station house was replaced with asphalt shingles. In 1985, the outbound platform between the main tracks and the low-freight line was raised. The former canopy was removed in the early 2000s, except for a small section attached to the South side of the main station house.¹⁴⁸

¹⁴⁵ "Determination of Effect Report," 49.

¹⁴⁶ Harold E. Spaulding, "Germantown," Workshop of the World (online).

¹⁴⁷ Ernest Hexamer & Son, 1914.

¹⁴⁸ "Determination of Effect Report," 54.

(I) 4433 Wayne Avenue, Brown Instrument Company

Site and Building History

The development of the Brown Instrument Company site is intimately tied to Wayne Junction Station, the crossroads for several rail lines. The area immediately south of the railroad tracks—primarily owned by the Philadelphia & Reading—remained sparsely developed. Wayne and Roberts Avenues had been platted but not constructed. In 1885, the subject property was owned by the Philadelphia & Reading. It held a mansion and stable built by Joseph Roberts, the cashier of Girard’s Bank (Figure 26).¹⁴⁹ In the next five years, the industrial nature of the property was established when a one-story factory manufacturing wood “Bobbins, Dumbbells &c.” was constructed on the corner of Wayne and Roberts avenues.¹⁵⁰ Between 1890 and 1895, a two-story soap factory operated by the Wrigley Manufacturing Company was built on the northern corner of the site.¹⁵¹ Roberts’ mansion was razed in 1901.¹⁵² See Figure 27 for a newspaper article from 1901, detailing the demolition of the mansion and the changing of the immediate area.

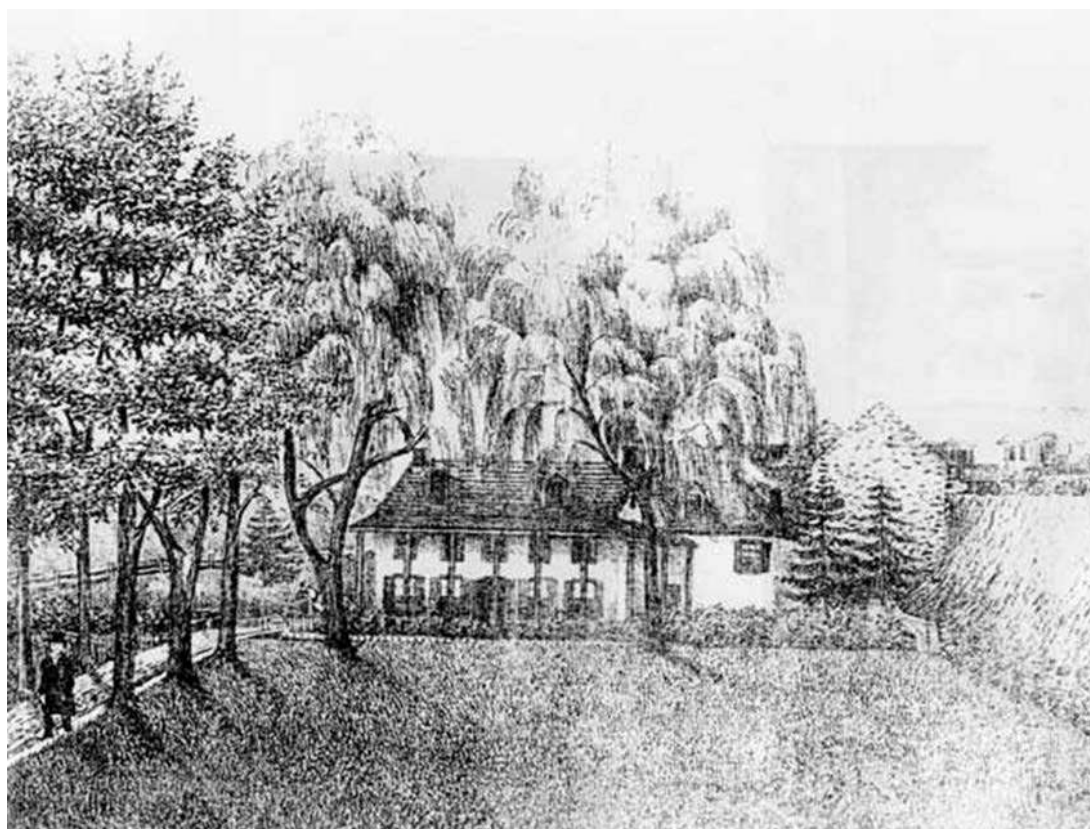


Figure 26. Roberts mansion, circa 1900. Source: Campbell Collection, Vol. 23, Historical Society of Pennsylvania

¹⁴⁹ Hopkins, 1885; Campbell Collection, Vol. 32, p. 41 (held by the Historical Society of Pennsylvania).

¹⁵⁰ Ernest Hexamer & Son, 1890.

¹⁵¹ Ibid.

¹⁵² Campbell Collection, Vol. 32, p. 38.

HOUSE OF GIRARD'S CASHIER BEING RAZED

Famous Old Mansion Near Wayne Junction Station
Being Demolished to Make Room
for New Park



THE JOSEPH ROBERTS MANSION

The famous old Joseph Roberts mansion, with its wooden colonnade, which has long been a landmark in the hollow east of Wayne Junction Station, on the Reading Railway, is being torn down. Although the neighborhood is greatly changed since the rows of small houses have been built in front of this quaint specimen of Colonial architecture, and for years the old Revolutionary house has had the appearance of general dilapidation, yet the local historians note its destruction with regret. When it was erected in such stately beauty in the far away Revolutionary days, the beautiful Wingohocking flowed past it, lined with handsome willow trees, while on the other side great stretches of lawn and woodland led down to the famous old "Roberts meadow."

While Joseph Roberts, cashier of Stephen Girard's bank, resided in this old Colonial mansion, historic Stenton—the home of James Logan—standing opposite in the distance, with great stretches of sloping lawn between, was the nearest neighbor. And it is with the keenest regret that the owners of the Reading road realize that only a few years ago this low land surrounding the Roberts mansion could have been purchased by them for

a mere song and a magnificent park might have been laid out, stretching from Wayne avenue to the Reading nurseries and the cricket grounds in front of Stenton. They failed to make this purchase, however, and the corner along Main street is now closely built up with stores, dwellings and factory buildings, increasing the value of the ground, but making a most unsightly spot between beautiful old Stenton, with its picturesque surroundings, and what will soon be a new park.

During the past few days the work of destruction has been progressing, and soon the last trace of the Roberts Mansion will disappear, then from Wayne Junction Station over to the quaint little planing mill nestled in the hollow of Roberts avenue, and from Wayne avenue to the rows of houses fronting Main street, there will appear one of the beauty spots, now so popular along the line of the Reading—a miniature park displaying the skill of famous landscape gardeners, in velvety lawns, artistic designs in bedding plants and groups of flowering shrubbery.

Since the erection of the new station the sloping elevations at the south and east—leading down into the hollow, where streets have been built over the once beautiful old Wingohocking—have been leveled and sodded and encircled with artistic iron fencing, making the approach to the new station greatly admired.

Figure 27. Newspaper clipping regarding the demolition of the Roberts mansion and the changes occurring in the immediate area. Source: Philadelphia Inquirer, June 17, 1901, p. 8.

In the next decade, a park and athletic hall were created on the subject block, even as industries expanded toward the same space. The Wrigley Manufacturing Company, bolstered by the success of its Kleenatub enamel cleaner, built an addition to its factory circa 1908; and the Krout & Fite Manufacturing Co. (weaving) constructed a new adjacent factory. Yet within two years, the park was converted into a rail yard and the athletic hall was converted or rebuilt for industrial use by Krout & Fite.¹⁵³ The trend of industrialization—and altering existing buildings to meet new manufacturing needs—continued in 1914, when the Wrigley Manufacturing Co. replaced its soap factory with a new two-story building for its “O & Premium Department” and enlarged the existing storage building.¹⁵⁴

By 1918, the two Wrigley buildings were joined by a connector into one long building, which was occupied by the Brown Instrument Company. The Brown Instrument Company manufactured industrial regulating instruments.¹⁵⁵ Another connector joined the remaining Krout & Fite building to the Brown Instrument Company building between 1918 and 1924; an addition was constructed along Wayne Avenue at that time.¹⁵⁶ These alterations were the beginning of the Brown Instrument Company complex that stands today. In 1929, a warehouse facing Roberts Avenue was replaced by a two-story factory building with two wings that connected to the existing building on Wayne Avenue (Figure 28).¹⁵⁷ Designed by the Ballinger Company, the addition had a steel frame and brick curtain walls. The Ballinger Company, established in 1878, was headquartered in Philadelphia. They were famous for the “daylight building,” which incorporated increased window area, and the “super-span” trussed saw-tooth roof. The popular daylight building allowed for 15 percent more light than the typical reinforced concrete industrial loft, and was first constructed in 1922 as a textile mill.¹⁵⁸

¹⁵³ Bromley, 1910.

¹⁵⁴ Ernest Hexamer & Son, 1914.

¹⁵⁵ Ernest Hexamer & Son, 1918.

¹⁵⁶ Sanborn Fire Insurance Map, 1924.

¹⁵⁷ Sanborn Fire Insurance Map, 1950.

¹⁵⁸ Bradley, 173.



Figure 28. New factory, circa 1929. Note older building to left. Source: Ballinger Collection, Athenaeum of Philadelphia

In 1941, rowhouses adjacent to the factory on the west side of Greene Street were demolished and replaced by a parking lot.¹⁵⁹ The garage was replaced in 1949 by another factory that occupied the entire west side of the block and increased manufacturing space by 60 percent.¹⁶⁰ The new factory had a steel and concrete frame and concrete walls with brick facing, which were common building materials after the Great Depression, which brought about a modernistic approach to industrial architecture. This bold Moderne aesthetic included smooth, sleek walls and rounded corners, as clearly visible on the Windrim Avenue and Greene Street corner of the 1949 Brown Instrument Company building.¹⁶¹ Brown Instrument Company became a division of Minneapolis Honeywell in 1934, and adapted the complex as new technology developed in the 1950s.

The complex was vacated by Brown Instrument/Minneapolis Honeywell in 1965, and the F. Weber Company occupied the building in 1966-67.¹⁶² Over the next twenty years, the complex held a rotating variety of industrial businesses: a blender/compounder and distributor of artists' supplies, a clothing manufacturer and sporting goods distributor, and a manufacturer of panel boxes and other electric assemblies. At various times, the complex also held a work advancement and job training center, offices, and an office supply company. Minor interior alterations were made to accommodate new equipment; permits do not indicate which buildings were altered.¹⁶³ In 1988, the 1929 and 1949 buildings were converted to a mini-storage facility with a public parking garage in the basement. The complex is

¹⁵⁹ Land Use Map, 1942; Sanborn Fire Insurance Map, 1950; Zoning Permit #19716, 5/19/1941; Application #6811B, Zoning Permit #31992, Use Permit #32688, 4/27/1948.

¹⁶⁰ Sanborn Fire Insurance Map, 1950; "Brown Instrument Announces \$2,500,000 Expansion Plan," *Steel Processing and Conversion* (American Drop Forge Association, June 1948), 320.

¹⁶¹ Bradley, 251.

¹⁶² Zoning Permit Application #60345F, 3/4/1959; Zoning Permit Application #33757H, Permit #131488, 4/1/1966.

¹⁶³ Zoning Permit Application #71453H, 4/18/1967.

currently occupied by Extra Space Storage and a public parking garage. Besides a variety of signage changes, no major alterations have been made since 1988.

Brown Instrument Company

The Brown Instrument Company complex is a contributing resource to the Wayne Junction Historic District. The Brown Instrument Company pioneered technological developments such as the first pyrometer in the United States and other industrial measurement and automated control systems that helped modernize factories. The buildings in the complex illustrate the progression of industrial design and construction systems from the turn of the 20th century, circa 1908-18, 1929, and 1949. The Philadelphia-based Ballinger Company, architects of the 1929 two-story addition, were famous for the “daylight building” which incorporated increased window area.¹⁶⁴ Finally, the complex is part of Wayne Junction, an intact industrial area that exemplifies the economic heritage of the neighborhood and the city of Philadelphia and exemplifies industrial growth centered on rail transit.

The Brown Instrument Company was founded by Edward Brown, an Englishman who immigrated to Philadelphia in 1857.¹⁶⁵ In 1859, Brown invented a carbon-rod instrument that measured temperatures in kilns and foundries—the first pyrometer in the United States (Figure 29).¹⁶⁶ The pyrometer enabled foundries to set and maintain the optimal temperatures for making high-quality iron and steel, thereby reducing the potential for flawed product.

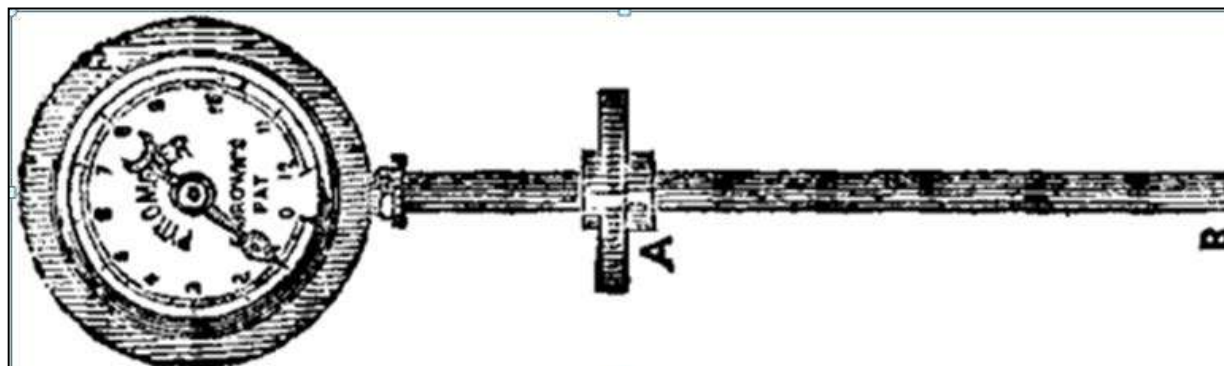


Figure 29. Advertisement for Brown’s pyrometer, 1871. Source: *Scientific American* Vol XXIV. No. 12. March 18, 1871 (Accessed via Chestofbooks.com)

In 1860, the company established its first factory and offices at 311 Walnut Street.¹⁶⁷ Business increased greatly in the next decades. An industry journal from 1911 stated that the Brown Instrument Company

¹⁶⁴ Bradley, 173.

¹⁶⁵ 1900 United States Federal Census (Accessed through Ancestry.com).

¹⁶⁶ Finding Aid for Brown Instrument Company Records (1925-1960),” processed by Todd Cohn, Hagley Museum and Library, 1; *Metallurgical and Chemical Engineering*, Vol. 9, October 1911 [monthly journal] (New York: Electrochemical Publishing Co.), 559 (Google Books).

¹⁶⁷ *Metallurgical and Chemical Engineering*, 559.

was “now in a position to manufacture or repair practically any type of instrument.”¹⁶⁸ In 1911, the Brown Instrument Company acquired a local subsidiary supplier, the Keystone Electrical Instrument Company, and moved its own growing production to Keystone’s larger factories at 9th and Montgomery Streets in North Philadelphia. Meanwhile, it maintained its Old City office as well as branch offices in Chicago and Pittsburgh.

Brown Instrument Company moved to Wayne Junction in 1914.¹⁶⁹ There, the company felt sure of having “the most up-to-date facilities for manufacturing instruments of precision.”¹⁷⁰ The Brown Instrument production method was based on a system that divided manufacturing into four specialized stages from specification writing to final assembly and employed many skilled workers.¹⁷¹ The company primarily hired workers from the local neighborhood, relying on in-house training and promotion to supplement recruitment from social networks.¹⁷² In the 1920s, Edward Brown’s son Richard, who became president of the company in 1905, instituted corporate welfare programs such as paid vacations and medical and life insurance.

When the Minneapolis-Honeywell Regulator Company acquired the Brown Instrument Company for \$2.3 million in 1934, Brown Instrument produced 500 instrument products, employed 500 workers, and had annual revenues of about \$2 million.¹⁷³ It was recognized as a “worldwide leader in industrial controls and indicators” like industrial thermometers and thermostats.¹⁷⁴ After the merger, Brown Instrument began to develop more advanced control systems for the oil and gas industries (Figure 30).¹⁷⁵ It also developed electromechanical devices to help automate factories before World War II.

¹⁶⁸ *Idem*, 614.

¹⁶⁹ “Among the Manufacturers,” *Steam* Vol. 13-14 (September 1914), 87 (Accessed through Google Books).

¹⁷⁰ “New Brown Instrument Factory,” in *Metal Industry*, Vol. 12 (Metal Industry Publishing Co., October 1914), 525 (Google Books).

¹⁷¹ Licht, 161.

¹⁷² Licht, 162.

¹⁷³ *Ibid.*

¹⁷⁴ *Ibid.*

¹⁷⁵ Licht, 2.



Figure 30. Brown Instrument Company/Honeywell building, view of Wayne Avenue façade in 1955. Source: PhillyHistory.org

Wartime demand for precision instruments required high-volume production, which heightened the need for automatic control of factories and boosted Brown Instrument's sales to record levels.¹⁷⁶ After the war, sales continued to climb as more industries looked to lower labor costs and offset raw materials costs with automatic control. Brown Instrument needed more space to experiment with remote control and automatic control devices. In 1948, the company announced a \$2.5 million expansion program to increase manufacturing space and employment by 60 percent.¹⁷⁷ Completed in 1949, the new four-story factory added 95,000 square feet and enabled Brown Instrument to consolidate its operations from leased sites, in addition to adding extra new space.¹⁷⁸ It also projected future growth: the new building's foundation was designed to support four additional floors.¹⁷⁹

¹⁷⁶ "Brown Instrument Company Announces Expansion Program," *Hydrocarbon Processing* Vol. 27 (Gulf Publishing Co., 1948), 223.

¹⁷⁷ *Ibid.*

¹⁷⁸ *Ibid.*; *Steel Processing and Conversion*, Vol. 34 (American Drop Forge Association, Steel Publications, 1948), 320 (Google Books).

¹⁷⁹ "Brown Instrument Company Announces Expansion Program."

In the 1950s, Brown Instrument began to use computers to produce more powerful modern control systems inspired by guided missile research.¹⁸⁰ By the mid-1950s, the company was producing analog computer systems capable of supervising an entire factory. These systems were used by corporations such as Procter and Gamble, Sun, Standard Oil, Seagram, General Electric, Shell, and the Atomic Energy Commission. This early work led to the development of the TDC 2000, “a digital process management system incorporating microprocessors,” in 1975.¹⁸¹ Eight years later, an even more integrated control system was produced in the TDC 3000.

The operations of the Brown Instrument Division were shifted to Fort Washington, Pennsylvania, in the 1960s. Today, the division (now the Industrial Automation & Control Division, or IAC) is located in Phoenix, Arizona.

A modern researcher notes that Brown Instrument continued to innovate in the fields of industrial measurement and control instruments, and later with control and automation systems for factories:

*Brown Instrument Company had a major impact on the development of modern industrial production. From invention of the pyrometer to the advent of sophisticated measurement and control systems, Brown Instrument was instrumental in the creation of modern industrial automation.*¹⁸²

¹⁸⁰ “Brown Instrument Company Announces Expansion Program.”

¹⁸¹ Ibid.

¹⁸² “Finding Aid,” 3.



GERMANTOWN AVENUE

BERKLEY STREET

WAYNE AVENUE

Undeveloped site;
non-contributing

Non-contributing

