NOMINATION OF HISTORIC BUILDING, STRUCTURE, SITE, OR OBJECT
PHILADELPHIA REGISTER OF HISTORIC PLACES
PHILADELPHIA HISTORICAL COMMISSION

SUBMIT ALL ATTACHED MATERIALS ON PAPER AND IN ELECTRONIC FORM (CD, EMAIL, FLASH DRIVE)
ELECTRONIC FILES MUST BE WORD OR WORD COMPATIBLE

1. ADDRESS OF HISTORIC RESOURCE *(must comply with an Office of Property Assessment address)*

Street address: 2100 West Allegheny Avenue
Postal code: 19132

2. NAME OF HISTORIC RESOURCE

Historic Name: Steel Heddle Manufacturing Company Complex
Current/Common Name: N/A

3. TYPE OF HISTORIC RESOURCE

☑ Building ☐ Structure ☐ Site ☐ Object

4. PROPERTY INFORMATION

Condition: ☐ excellent ☐ good ☑ fair ☐ poor ☐ ruins
Occupancy: ☐ occupied ☑ vacant ☐ under construction ☐ unknown
Current use: Vacant/Not In Use

5. BOUNDARY DESCRIPTION

Please attach a narrative description and site/plot plan of the resource's boundaries.

6. DESCRIPTION

Please attach a narrative description and photographs of the resource's physical appearance, site, setting, and surroundings.

7. SIGNIFICANCE

Please attach a narrative Statement of Significance citing the Criteria for Designation the resource satisfies.
Period of Significance (from year to year): from 1919 to 1971
Date(s) of construction and/or alteration: 1919, 1922, c. 1944, 1951
Architect, engineer, and/or designer: William Steele and Sons Company
Builder, contractor, and/or artisan: William Steele and Sons Company
Original owner: John J. Kaufmann
Other significant persons: Frank Kaufmann and John J. Kaufmann Jr.

CRITERIA FOR DESIGNATION:

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

- [x] (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,
- [x] (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
- [x] (j) Exemplifies the cultural, political, economic, social or historical heritage of the community.

8. MAJOR BIBLIOGRAPHICAL REFERENCES

Please attach a bibliography.

9. NOMINATOR

Organization Heritage Consulting Group Date 12/3/2021

Name with Title Cindy Hamilton, President Email chamilton@heritage-consulting.com

Street Address 15 W. Highland Ave. Telephone (215) 248-1260

City, State, and Postal Code Philadelphia, PA 19118

Nominator ☐ is ☑ is not the property owner.

PHC USE ONLY

Date of Receipt: 7 December 2021

☒ Correct-Complete ☐ Incorrect-Incomplete Date: 16 December 2021

Date of Notice Issuance: 17 December 2021

Property Owner at Time of Notice:

Name: AM8 Group Steel Heddle Building LP

Address: 3810 N 19th Street #20

City: Philadelphia State: PA Postal Code: 19140

Date(s) Reviewed by the Committee on Historic Designation: 19 January 2022

Date(s) Reviewed by the Historical Commission: 11 February 2022

Date of Final Action: 11 February 2022

☒ Designated ☐ Rejected Criteria for Designation A, E and J

5. BOUNDARY DESCRIPTION

OPA property #884557110, includes the address extending from 2100-2120 West Allegheny Avenue in Upper North Philadelphia, Pennsylvania. The Steel Heddle Manufacturing Company Complex is bound by West Allegheny Avenue to the north, North 21st Street to the east, West Lippincott Street to the south, and unassociated parcels fronting North 22nd Street to the west.

Beginning at the northeast corner, the property adjacent to the southwest corner of the intersection of W. Allegheny Avenue and N. 21st Street, proceed south 245' along the property line to the southeast corner of the building adjacent to the northwest corner of W. Lippincott and N. 21st Streets. Then proceed 337' west along the south property line, turning north for 245' along the west property line of the subject building. Then proceed 337' east along the north property line and return to the point of origin.

The boundary is the current and legal boundary of the nominated property and includes all resources historically associated with the Steel Heddle Manufacturing Company at this location.

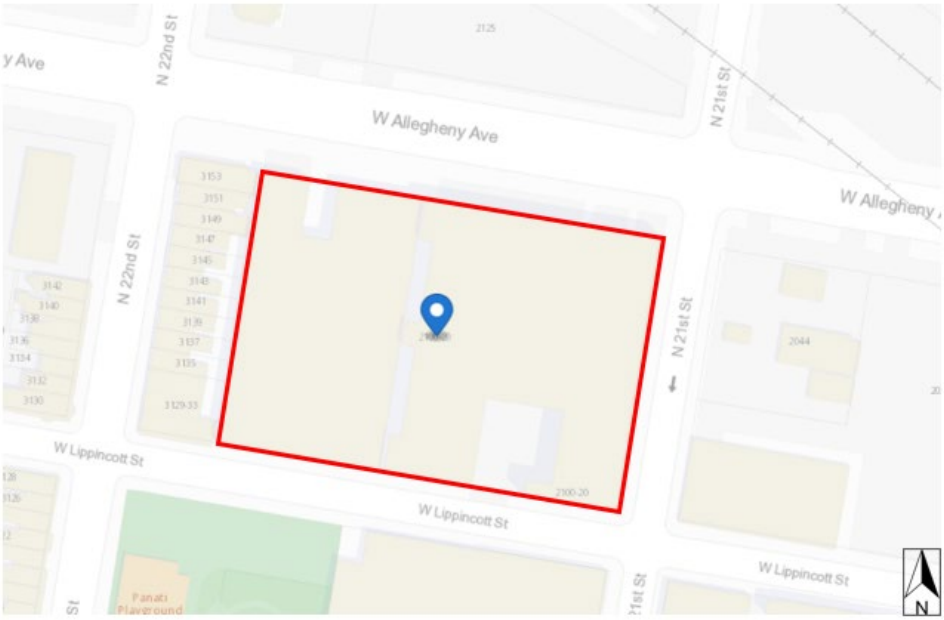

Figure 1: Steel Heddle Manufacturing Company Complex Boundary Map, City of Philadelphia Atlas.

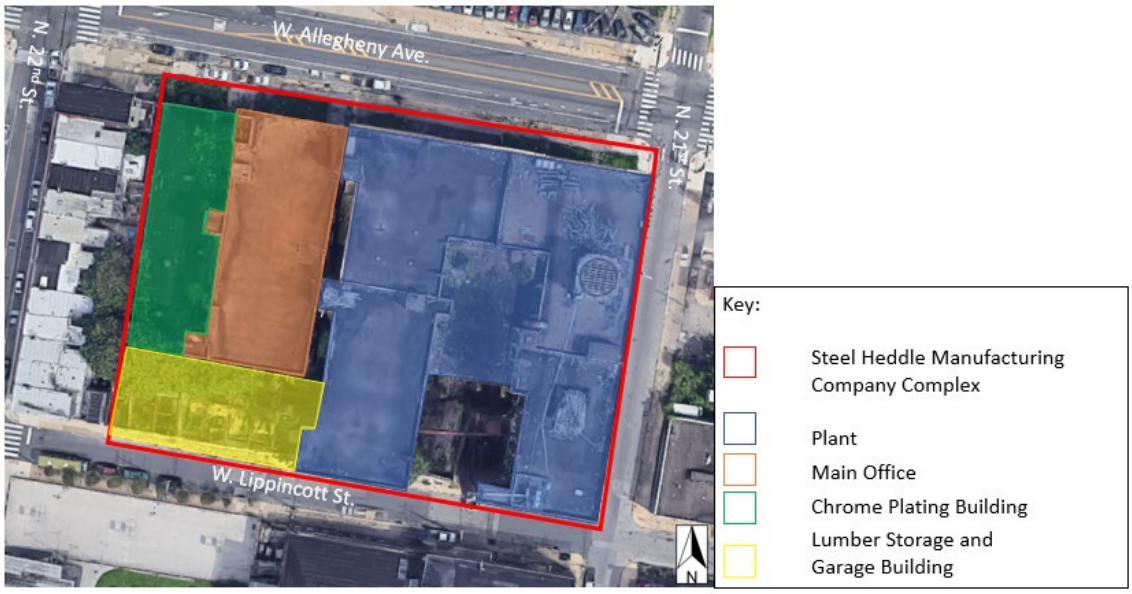

Figure 2: Steel Heddle Manufacturing Company Complex Boundary Map, Google Maps.

6. DESCRIPTION

The Steel Heddle Manufacturing Company Complex is situated at the southwest corner of West Allegheny Avenue and North 21st Street in Philadelphia, Pennsylvania. The complex was constructed as the Main Office and Plant for the Steel Heddle Manufacturing Company, a producer of textile loom accessories. The Steel Heddle Manufacturing Company Complex was completed in multiple stages and was predominately built by William Steele & Sons Company. Included within the Steel Heddle site are: the Plant (constructed 1919 with an addition in 1925-1927), the Main Office (constructed between 1919 and 1922), the Chrome Plating Building (constructed in 1951) and the Lumber Storage and Garage Building (constructed c.1930). The four buildings that comprise that Steel Heddle complex occupy a 1.8-acre, rectangular site located on the eastern portion of the 2100 block of West Allegheny Avenue.

The U-shaped brick and concrete Plant (Figures 3-11) rises five-stories to a flat roof. Attached to the west elevation of the southeast corner of the building is a brick boiler room and chimney that was constructed in 1918. Within the "U" is a brick two-story loading platform that was constructed in the late 1950s. The Main Office (Figure 12) is a rectangular four-story brick structure located immediately to the west of the Plant fronting West Allegheny Avenue. The one-story brick and CMU block Chrome Plating Building (Figure 13) is located directly to the west of the Main Office, fronting West Allegheny Avenue, and the one-story brick Lumber Storage and Garage building (Figure 14) is located to the south of the Main Office and Chrome Plating Building and fronts West Lippincott Street. The buildings are interconnected through various openings at the ground level.

Structure:

Plant: The U-shaped Plant is five stories in height with a raised basement. The building features reinforced concrete flat-slab construction with brick curtain walls and a flat concrete slag roof. The brick and exterior exposed concrete framework walls enclose the concrete mushroom columned structure. The U-shape of the building was completed in successive building stages, all of which employed flat slab reinforced concrete construction with mushroom columns on a regular grid. Attached to the southwest corner of the east wing of the "U" is a one-story brick boiler house with a brick chimney. Within the "U' is a two-story loading dock addition with brick wall, concrete beams and columns and concrete floors poured on corrugated metal decking.

Main Office: The building situated just west of the plant rises four-stories with a raised basement to a flat roof. The rectangular building is constructed of wood columns and beams with brick exterior cladding.

Chrome Plating Building: The rectangular one-story building has an exposed steel truss and beam frame with a concrete floor and concrete block walls. The roof is corrugated metal.

Lumber Storage and Garage Building: The rectangular one-story building has brick walls and a steel frame with exposed trusses. The roof is constructed of wood plank and the floor is a concrete slab.

Building Descriptions:

Plant: The primary (north) façade (Figures 3-5) is organized into eleven bays and has exposed, painted concrete framework and patterned brick spandrels. The roof has a brick parapet with a raised terra cotta nameplate at the center of the building. The main entrance (Figure 6) is located within the third bay from the east end and has a double-leaf door with sidelights and transoms. The door is located above grade and is accessed by a concrete stair with a metal railing. On the first floor, the windows are 1/1 wood units. The windows at the basement and on floors 2 – 5 are tripartite industrial steel sash.

Within the "U" of the plant is a two-story brick enclosed loading platform addition with three bays (Figure 9). The loading platform is glazed with multi-light steel industrial sash. The loading platform addition occupies the entire north section of the "U" and is attached to the north, west and east wings of the Plant. At the southwest corner of the east wing is a one-story brick boiler room (Figure 9). The boiler room has rusticated corners and terra cotta coping. Rising from the boiler room is a cylindrical red brick smokestack inscribed with "Steel Heddle Mfg." in vertical tan brick lettering on the north side. Within the "U" there are multi-light industrial steel windows and unornamented brick infill within the exposed concrete framework.

The east elevation (Figure 7) has twelve bays with exposed painted concrete structure and patterned brick spandrels. The two middle bays front an open-air fire tower. The entrance to the fire tower is located above grade on the east elevation and is reached by a double stair. Windows on the elevation are double-hung wood sash on the first floor and quadrupled and tripartite multi-light industrial steel sash at the basement and upper floor levels.

The south elevation (Figures 8-9, 11) of each wing is four bays wide. Each wing has exposed concrete framework and the east wing has patterned brick spandrels while the west wing has unornamented brick spandrels. The elevation has tripartite multi-light industrial steel windows.

The west elevation has twelve bays with exposed painted concrete structure and unornamented brick spandrels and infill. Windows on the elevation are tripartite multi-light steel sash.

Main Office: The primary (north) elevation (Figure 12) is four bays wide and constructed of brick. The brick piers, foundation, and sills and lintels are painted. The spandrels and parapet are tan brick with green diamond accents between the first and second floors and at the parapet. The parapet is topped with common red brick and remnants of a corbelled brick cornice which appears to have been removed in the mid-to-late-20th century. The cornice appears to have been removed due to structural issues as the brick has

substantially subsided and has multiple cracks. The first floor windows are 1/1 wood units while the upper floor windows are multi-light steel sash. The entrance to the fire tower that rises to the roof is within the westernmost bay of the north elevation and is accessed by a simple concrete stair. At the northwest corner of the building is a brick tower that rises above the roofline.

The west elevation has six bays and is finished in common red brick. The windows are multi-light metal sash and have concrete sills and lintels.

The south elevation is five bays wide and is constructed of common red brick. The windows are multi-light steel sash and have concrete sills and lintels.

Chrome Plating Building: The primary (north) elevation (Figure 13) is three bays wide and is constructed of red brick with a stepped parapet. The elevation has a wood, utilitarian entrance door flanked by boarded window openings. The remaining elevations are painted concrete block walls with multi-light industrial steel windows. Due to the building's location within the site and adjacent to unrelated properties to the west, the remaining elevations feature limited visibility from public rights-of-way.

Lumber Storage and Garage Building: The one-story brick building fronts West Lippincott Street on the south side of the property. The south elevation (Figure 14) has three glazed wood overhead doors and steel multi-light windows. The west elevation has steel multi-light windows. The north and east elevations intersect the Main Office and Chrome Plating Buildings and are not exposed. The Lumber Storage and Garage Building survives in a ruinous condition. The roof was previously removed, leaving only the steel frame truss system.

7. SIGNIFICANCE

Introduction

The Steel Heddle Manufacturing Company Complex, located at 2100 West Allegheny Avenue in Philadelphia, Pennsylvania is comprised of four interconnected industrial buildings (Plant, Main Office, Lumber Storage and Garage, Chrome Plating) that were constructed between 1919 and 1951. The North Philadelphia-based complex served as the Steel Heddle Manufacturing Company's main manufacturing plant and headquarters for over sixty years during the 20th century. Throughout that time, the company was a national leader in the development, manufacture, and distribution of textile loom accessories. At the complex, Steel Heddle conceived of and manufactured some of the textile manufacturing accessory industry's most innovative products, including: steel heddles, heddle frames, reeds and chrome plated goods. Further, the Plant was designed by William Steele and Sons Company, a prominent and influential Philadelphia-based architectural firm. As such, the Steel Heddle Manufacturing Company Complex satisfies the following criteria for historic designation as established in Philadelphia's Historic Preservation Ordinance, Section 14-1004 (1):

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

The period of significance for the Steel Heddle Manufacturing Company Complex extends from 1919, the date of construction of the Plant building, to 1971, when the Steel Heddle Manufacturing Company relocated to Greenville, South Carolina.

Developmental History

The Steel Heddle Manufacturing Company established its manufacturing facility at 2100 West Allegheny Avenue in 1914. The original factory complex consisted of leased space on the fourth floor of a former tenant manufacturing building located at 2118 West Allegheny, which is currently the location of the west wing of the Plant. On the eastern portion of the property were three one-story brick and wood framed structures utilized for storage, a lumber shed and a wood working shop. At the southeast corner of the property was a one-story brick powerhouse and boiler room.

By the late-1910s, it was determined that the existing production facilities were not large enough to meet the spatial needs of the growing company and a major expansion was proposed. In 1919, the Steel Heddle Manufacturing Company commissioned the William

Steele and Sons Company to design a five-story concrete and brick factory building, the earliest section of the Plant, to be located at the northeast corner of the property. In order to construct the building, the previously extant storage building and wood working shop were demolished. The new building connected to an existing lumber shed to the south, and to the four-story building at 2118 W. Allegheny via a bridge at the second floor. The need for additional space led to the expansion of the Plant during the mid-1920s. In 1925, the former lumber shed and powerhouse, located at the southeast corner of the property, were razed, and replaced with two five-story brick and concrete buildings that were integrated into the 1919 building. In 1926-1927, the original tenant manufacturing building at 2118 W. Allegheny Avenue was razed and replaced with a five-story brick and concrete structure that was connected with the 1919 structure. The multiple five-story structures were designed utilizing a uniform aesthetic which allowed them to appear and function as a singular U-shaped building.

The Main Office building was constructed between 1919 and 1922 by Pabst and Company, which operated a window shade manufacturing facility on the property immediately to the west of the original Steel Heddle complex. While under the operation of Pabst and Company, the Main Office was utilized for multiple operations including: office and shipping on the first floor, upholstery and assembly on the second floor, printing on the third floor and storage on the fourth floor.[1] Following the closure of Pabst and Company, the building was utilized as a tenant factory. From c. 1925 until 1982, the upper floors of the building were occupied by the Sidney J. Burgoyne Greeting Card Company and utilized as the firm's main office, printing, and shipping facility. The first floor of the building was utilized by the Steel Heddle Manufacturing Company as its Main Office from 1942 until the relocation of its headquarters to Greenville, South Carolina in 1971.[2]

The Lumber Storage and Garage Building was constructed by the Steel Heddle Manufacturing Company between 1922 and 1944. This one-story brick building located at the southwest corner of the parcel was constructed on land formerly occupied by eight brick row houses.

The one-story Chrome Plating Building was constructed in 1951 following the Steel Heddle Manufacturing Company's acquisition of the site which was vacant but had formerly been occupied by two three-story buildings utilized in the manufacturing of window shade cloth by Pabst and Company.

Although constructed in multiple stages and by different owners, the Steel Heddle Manufacturing Company Complex was fully interconnected and operated as an integrated manufacturing and office facility. Following the company's shift to Greenville, South Carolina, the company continued to operate out of the subject facility until 1983, when they ceased all operations in Philadelphia. After that point, the complex was used for paper

[1] "Sanborn Fire Insurance Map." Map. Sanborn Fire Insurance Map, 1921. The Sanborn Library. Environmental Data Resources Inc. 2008.

[2] Philadelphia City Directory. Philadelphia, PA: The Bell Telephone Company of Pennsylvania, 1946, 1950, 1954, 1967, 1972, 1982., "Philadelphia Fire Insurance Map." Map. Hexamer Fire Insurance Maps. 1922. Philadelphia, PA. 2008., "Sanborn Fire Insurance Map." Map. Sanborn Fire Insurance Map 1951, 1967. The Sanborn Library. Environmental Data Resources Inc. 2008.

recycling and telecommunications prior to being completely vacated in 2006. The Steel Heddle Manufacturing Company Complex was listed in the National Register of Historic Places in 2009.

Criteria A & J

The Steel Heddle Manufacturing Company is significant under both Criteria A and J for its role in the industrial heritage of Philadelphia. The Steel Heddle Manufacturing Company, one of the largest weaving loom accessory suppliers in the United States, supplied the nation's textile industry with the most technologically advanced steel heddles and associated loom harness equipment. At a time when loom heddles were produced from iron wire and lacked durability, the Steel Heddle Manufacturing Company developed the first single piece flat steel heddle which represented a significant advancement in the industry. The steel heddle was significantly more durable than the wire heddles and provided a significant cost savings to textile manufacturers. As a result, close to 100 percent of the silk mills in the United States were equipped with the company's steel heddles.

Philadelphia as a Textile Center

Although New England is often seen as the cradle of the American textile industry, Philadelphia played a prominent role in the development of the commercial textile industry. Prior to the American Revolution, the first commercial cotton manufacturer, the "United Company of Philadelphia for Promoting American Manufacturers" was chartered in 1775.[3] In the same year, the first American carpet manufacturer was established in Philadelphia by William Calverly. During the revolutionary era, textile operations including calico printers, oilcloth, wool, hosiery and cording manufacturers were established in Philadelphia.[4]

During the nineteenth century, Philadelphia became recognized as a national leader in the textile industry. In 1815, the first silk manufacturing operation in the United States was established in Philadelphia by W.H. Horstman.[5] By 1857, Philadelphia had more textile factories than any other city in the world. During this period, the textile manufacturers in New England began to consolidate their operations and products became mass produced within large factories utilizing inexpensive immigrant labor. In Philadelphia, the textile industry remained dominated by proprietor-owned businesses with few corporations or large operations. In 1850, over 320 textile firms operated within the city and employed over 12,000 workers. Many of these workers were highly skilled which allowed the firms enough flexibility to survive the ebb and flow of the textile market by switching production from one product to another with relative ease.[6] In addition to a skilled workforce, the textile industry in Philadelphia continued to diversify and thus the first decorative cotton and lace factories in the United States were established in Philadelphia during the 1880s, including the Quaker Lace Company which was said to be the largest lace manufacturing

[3] MacFarlane, John J. Manufacturing in Philadelphia: 1683-1913. Philadelphia, PA: Philadelphia Commercial Museum, 1912. 24-25.
[4] Textile Industries of Philadelphia. Philadelphia: Philadelphia Commercial Museum, 1911. 9-12.
[5] Textile Industries of Philadelphia. Philadelphia: Philadelphia Commercial Museum, 1911. 12.
[6] Blackford, Mansel G. A History of Small Business in America. 2nd ed. Chapel Hill, NC: UNC Press, 2003. 55.

mill in the world.[7] By the 1880s, Philadelphia textile companies employed 55,000 workers, the highest concentration of textile workers in the nation.[8]

At the turn of the 20th century, nineteen percent of the city's seven-thousand manufacturers were textile plants.[9] By 1909, nearly one-third of all workers in Philadelphia were employed in the textile industry. The Philadelphia textile industry was the largest in the United States with a 1909 production value of over $150 million ($3.5 Billion in 2008), more than twice that of the second largest textile producing city, Lawrence, Massachusetts.[10] Manufacturing of woolens, hosiery, clothing and carpets remained the city's largest and most valuable industry.

Throughout the early 20th century, Philadelphia's textile industry continued to prosper, but changing economics of production and retail loomed over the industry. The proliferation of modern mill facilities in the south in conjunction with the emergence of intermediate textile purchasers, including chain and department stores, meant that the established Philadelphia textile producers were forced to compete with producers who could make products cheaper, and buyers who could buy in large quantities and thus demand lower prices and frequent deliveries. Unable or unwilling to consolidate, many of the Philadelphia textile firms fell victim to the changing textile market. The Philadelphia textile industry reached its pinnacle in 1925, after which, the local industry went into steep decline.[11]

Philadelphia Textile Machine Accessory Industry

Although heavily dependent on labor, the textile industry required a myriad of machines to produce the large variety of textiles. Weaving technology advanced from hand operated machinery at the turn of the 19th century to automated spinning machines and power looms at the turn of the 20th century. Although many machines contributed to the production of textiles, the loom was the primary piece of machinery which was utilized to weave cloth. Looms utilized warp threads that ran lengthwise, and woof threads that ran crosswise which were interwoven to make cloth. The introduction of heavier and piece-dyed fabrics created a market for stronger looms and harness equipment. Traditionally, textile mills did not produce their own loom harness accessories, instead relying on outside manufacturers. Manufacturers of heddles and other loom accessories supplied the booming textile industry with the necessary equipment to keep their machines operating.

In order to serve the local textile industry, textile machine accessory manufacturers established operations in Philadelphia, most notably in the textile-dominated neighborhoods of Kensington and Fishtown. These manufacturers produced the primary equipment for the industry including: looms, boilers, finishers, humidifiers, dryers, pickers,

[7] MacFarlane, John J. Manufacturing in Philadelphia: 1683-1913. Philadelphia, PA: Philadelphia Commercial Museum, 1912. 27.
[8] Blackford, Mansel G. A History of Small Business in America. 2nd ed. Chapel Hill, NC: UNC Press, 2003. 56.
[9] Textile Industries of Philadelphia. Philadelphia: Philadelphia Commercial Museum, 1911. 5.
[10] MacFarlane, John J. Manufacturing in Philadelphia: 1683-1913. Philadelphia, PA: Philadelphia Commercial Museum, 1912. 13-14.
[11] Blackford, Mansel G. A History of Small Business in America. 2nd ed. Chapel Hill, NC: UNC P, 2003. 56-57.

presses, braiders, washers, winders and water softeners.[12] At the turn of the 20th century, these machines began to dominate the industry, and were extremely complicated, with many interrelated parts and accessories. Power looms, the mainstay of modern textile manufacturing, generally had their frames constructed by one firm, but the myriad of accessories required for operation were manufactured and supplied by other companies. The accessories required for power looms included: heddles, harnesses, shuttles and reeds. Although the Steel Heddle Manufacturing Company produced multiple accessories, it was best known for its namesake product, heddles, which are parallel cords or wires used to separate and guide the warp threads and make a path for the shuttle, which guides the thread across the loom.

In Philadelphia, although the demand for these products was great, loom accessory manufactures were relatively limited. At the turn of the 20th century, the only company producing heddles in Philadelphia was the Steel Heddle Manufacturing Company.[13] With the growth of the textile industry in the early 20th century, and the increase in mechanization, competitors began to enter the loom accessory market. The Walker Manufacturing Company, located at the corner of Kensington Avenue and Ontario Street in the Kensington neighborhood of Philadelphia, manufactured numerous loom accessories. Although established in 1875, the Walker Mfg. Co. remained a small local company and was not listed in the Official American Textile Directory until 1920.[14] During this period, loom accessories were also manufactured in Philadelphia by the Benazet Heddle Company, located at Fifth and Girard Streets and the Philadelphia Loom Reed Company located at Mascher and York Streets.[15]

Although three additional companies manufactured loom accessories in Philadelphia, none matched the size, clout or capacity for innovation witnessed at the Steel Heddle Manufacturing Company. In 1919, the year the Steel Heddle Manufacturing Company began construction on its modern manufacturing facility at 2100 West Allegheny Avenue, Steel Heddle employed 90 workers, while the other four loom accessories manufacturers employed only 60 workers in total.[16] In addition, numerous machine shops, produced and repaired textile machinery, but none specifically produced accessory products in the "wire" category as the Steel Heddle products were labeled.

Unlike the Steel Heddle Company, the local competitors did not have a signature product. The Benazet Heddle Company produced only iron wire heddles and was a very small operation with only three employees in 1920. The firm was located at the corner of Fifth and Girard Streets (not extant) and supplied only local firms. The Walker Manufacturing Company was a successful manufacturing company and offered an assortment of textile loom accessories including: reeds, heddles, heddle frames, harnesses, and combs. Until the

[12] Garside, Alston H., ed. Standard Cotton Mill Practice and Equipment. Publication. Boston, MA: The National Association of Cotton Manufacturers, 1921. 289-312.
[13] The 1902 Textile World Official Directory. Publication. Boston, MA: Guild & Lord, 1902. 51.
[14] Textile World Journal, comp. Official American Textile Directory 1920. Publication. Boston, MA: Bragdon, Lord & Nagle Co., 1920. 117.
[15] Commonwealth of Pennsylvania. Department of Labor and Industry. Third Industrial Directory of Pennsylvania 1919. Harrisburg, PA: J.L.L. Kuhn, 1920. 309, 335, 336.
[16] Commonwealth of Pennsylvania. Department of Labor and Industry. Third Industrial Directory of Pennsylvania 1919. Harrisburg, PA: J.L.L. Kuhn, 1920. 873, 938, 974, 975, 1001, 1012.

c. 1920, the Walker Mfg. Co. was located in a three-story timber framed brick factory (extant) located at the corner of J and Estaugh Streets in the textile producing neighborhood of Kensington. Between 1920 and 1940, the company moved a few blocks east to a two-story tan brick factory (extant), located at Ruth and Atlantic Streets, which was constructed in the early 20th century as the Cambridge Worsted Mill. The Philadelphia Loom Reed Company, located at Mascher and York Street in Kensington (not extant) produced only loom reeds and was a very small operation with only five employees in 1920.

While the other loom accessory manufacturers remained small and localized, Steel Heddle rapidly grew in size and expanded with an international office in Canada, northeast office in Rhode Island and a southern division based in Greenville, South Carolina. The development of the modern complex at 2100 West Allegheny provided Steel Heddle with direct railroad access which allowed the complex to easily ship finished goods to textile mills throughout the country. Steel Heddle's growth was tied directly to its penchant for innovation and the company continuously upgraded its product line as exemplified in its numerous patents and by its longevity in the industry. This dedication to product development, along with the ability to reach markets throughout the continent allowed Steel Heddle to remain the primary national manufacturer and supplier of loom accessories. Although textile manufacturing in Philadelphia declined throughout the mid-20th century, Steel Heddle's modern manufacturing facility and the corporation's focus on research and development uniquely positioned it to adapt to the geographical and technological changes in the American textile industry and allowed it to remain competitive in the textile accessory manufacturing industry.

By contrast, Steel Heddle's competitors were unable to survive the mid-20th century decline in the industry. Steel Heddle's Philadelphia competitors were localized in distribution and lacked the ability to reach beyond the Philadelphia market. While Steel Heddle relocated to the modern, reinforced concrete factory at 2100 West Allegheny, the local competitors remained within the Kensington neighborhood. Although the neighborhood was the historical epicenter of the Philadelphia textile industry, the density of structures allowed for little expansion of infrastructure. As a result, Steel Heddle's competitors were unable to take advantage of alternative markets or modern manufacturing processes. With the decline of textile manufacturing within Philadelphia and specifically the Kensington neighborhood, these small loom accessory manufacturers were unable to adapt to the changing textile industry, and could not complete with Steel Heddle; thus as the local market faded to memory, so did Benazet Heddle, Kensington Machine Works, Philadelphia Loom Reed Company and the Walker Manufacturing Company, with Steel Heddle as the lone surviving loom accessory manufacturer in Philadelphia.

Steel Heddle Manufacturing Company

The Steel Heddle Manufacturing Company played a prominent role in the textile machine accessory industry on a local, national and international level. The Steel Heddle Manufacturing Company was founded in 1898 by John J. Kaufmann, a German immigrant in a two-story, four-bayed machine shop in the Philadelphia neighborhood of

Germantown.[17] The company patented the first flat steel heddle in the United States for the users of loom harness equipment, which made looms more efficient and therefore created greater profits for textile manufactures.[18] Prior to the introduction of the stamped flat steel heddle, textile manufactures utilized twisted wire heddles which were universally despised in the industry as "its life at the longest seldom exceeds a period of two years and during that time it often becomes necessary to remove heddles that have become worn or bent."[19] Production of the new flat steel heddles allowed textile manufacturers to use heavier fabrics and increased loom efficiency as the patented cast steel heddles rarely required replacement. The stronger and more reliable steel heddles significantly reduced manufacturers replacement costs and increased profits as stated in the 1909 *Textile World Record*; "This is one of the small economies to which we refer but there is enough in the virtues of the steel heddle to commend it to every mill where a strict adherence to economic principles prevail."[20]

The success of Steel Heddle Manufacturing Company's steel heddle made it necessary for the company to expand. In 1914, the company relocated from its meager workshop in the Germantown neighborhood of Philadelphia to leased space in a tenant factory located at 2118 West Allegheny Avenue.[21] The new location provided the company with increased production capacity and proximity to rail lines for shipping and receiving. In addition to expanding locally, Steel Heddle established an "Eastern Office" in Providence, Rhode Island, and a "Southern Office" in Greenville, North Carolina to provide greater market penetration and customer support to the manufacturers in these textile manufacturing hotbeds.[22]

The Steel Heddle Manufacturing Company constructed the modern five-story Plant building between 1919 and 1927 and it originally housed the entire manufacturing line, as well as storage and offices. The construction of the Lumber Storage and Garage Building, between 1922 and 1944 provided extra storage space for the raw materials. As growth continued, the company purchased the adjacent building (Main Office) in 1942 and relocated its main office into the first floor. The construction of the Chrome Plating Building in 1951, allowed the company to expand its product line to include chrome plated loom equipment.

Between 1919 and 1923, all manufacturing, research and development (R&D) and most office work was undertaken at the West Allegheny facility. The first floor of the Plant building, conspicuous from the exterior due to its wood office-type 3/3 double-hung wood windows, was the heart of the Steel Heddle operation, specifically the R&D department

[17] Steel Heddle Manufacturing Company. Loom Harness Equipment of Quality. Reference Book, Philadelphia, PA. 1950. (Introduction)
[18] Ibid.
[19] Textile World Record. Publication. Vol. 36. Boston, MA: Lord & Nagle Co., October, 1908- March, 1909. 601.
[20] Ibid.
[21] "Philadelphia Fire Insurance Map." Map. Hexamer Fire Insurance Maps. 1914. Philadelphia, PA. 2008.
[22] Textile World Journal, comp. Official American Textile Directory 1916. Publication. Boston, MA: Bragdon, Lord & Nagle Co., 1916. 45.

which was responsible for the many innovative designs that maintained the company's prominence in the loom accessory manufacturing business.[23]

The continued success of Steel Heddle Manufacturing Company and its expanding list of clients prompted the establishment of a southern division, with the construction of a manufacturing plant in Greenville, South Carolina in 1923. Steel Heddle cornered the southern market with the establishment of the Southern Shuttle division at a second Greenville plant. Prior to 1950, Steel Heddle also established a manufacturing plant in Atlanta, Georgia and established sales offices in Greensboro, North Carolina and Montreal, Canada.[24] Until 1971, the primary manufacturing and office operations continued at the West Allegheny complex and included: chrome plating operations, R&D and metal stamping.

The Kaufmann family remained prominent in the company as sons Frank and John J. Jr. each held terms as president. It was during the tenure of Frank Kaufmann that the headquarters relocated to its Greenville, South Carolina location in 1971.[25] Philadelphia operations ceased in 1983 when the registered office of the Steel Heddle Manufacturing Company was transferred from the plant in north Philadelphia to a legal office in center city Philadelphia.[26] Following multiple mergers, the Steel Heddle Manufacturing Company remains in operation today as a division of the Belgian based Global Textile Partner Corporation with manufacturing plants in South Carolina, North Carolina and Georgia. Today, the company is considered one of the world's largest manufacturers of precision textile loom accessories holding numerous trademarks and patents effective in the US and in several foreign countries.[27]

Steel Heddle Manufacturing Company Products

Steel Heddle products, marketed and distributed under the trade name STE-HED-CO, included virtually all replaceable parts necessary in the operation of harness frames, reeds and shuttles, and bobbins. The Steel Heddle Manufacturing Company was the first manufacturer in the United States to introduce a single piece steel heddle which was quickly adopted as the preferred heddle in the silk weaving industry. Originally introduced in 1898, the success of this product led to the firm's development of an assortment of weaving accessories including numerous patents for heddles, harness frames, reeds and shuttles.[28] Between 1919 and 1971, Steel Heddle's innovative loom accessories were developed at the Plant and later the Main Office. Steel heddles, which represented the company's core product, became essential for textile manufacturing in the early twentieth century with the introduction of modern fabrics. The new fabrics were much heavier in weight than earlier silks, and new resilient and efficient harness equipment was needed.

[23] United States of America. Department of the Interior. Patent Office. U.S. Patent Gazette. Washington, DC: Government Printing Office, 1920. 505.
[24] Greenville News Online. Obituary. Frank H Kaufmann. February 23, 2005. http://news.greenvilleonline.com/obits. (assessed March 21, 2007)
[25] Greenville News Online. Obituary. Frank H Kaufmann.
[26] Commonwealth of Pennsylvania. *Statement of Change of Registered Office*. 10 November 1983.
[27] Steel Heddle Manufacturing Company S-4 Form. Registration of Securities Issued in a Business-Combination Transaction: 1998. http://www.secinfo.com/dsvRq.72Qa.htm#1stPage. (assessed March 21, 2007).
[28] Kaufmann, Jacob. Heddle. Jacob Kaufmann, assignee. Patent 996,650. 4 July 1911.

The first steel heddles were made of soft Bessemer steel, but the Steel Heddle Manufacturing Company replaced this material with high carbon steel which was specifically manufactured to "withstand the abrasive action of the hard fiber of the raw silk thread, reducing wearing of the heddle eye."[29] As a result, the company advertised that nearly 100 percent of the silk mills of the country employed STE-HED-CO heddles in their looms.[30] Due to the success of their steel heddles at silk mills throughout the country, in 1906, the company developed a heddle for cotton fabrics followed by a more sophisticated Duplex heddle which was recognized for its strong quality. During the mid-1920s, with the increased use of the synthetic yarn, rayon, the Steel Heddle Manufacturing Company developed a heddle to work with the delicate filaments, and perfected the Artex heddle, which could weave any size warp thread.[31] With the development of modern weaving looms, the firm continuously updated and refined its product line and offered additional steel heddle designs to meet the needs of the textile manufacturers.

The Steel Heddle Manufacturing Company not only manufactured steel heddles, but expanded its business to make and supply loom harness equipment for the textile industry. Heddle frames, predominately made of wood, were one of the many loom products produced by the company. The first harness frame introduced by Steel Heddle was the *Ideal* frame in 1911; however, as each new heddle was developed, the frame needed to be modernized to achieve proper efficiency.[32] Along with the heddles and frames, the company designed and patented harness frame accessories including steel bolts and screws which were used to the frame to the heddle bars which supported the heddles.[33] The Steel Heddle Manufacturing Company further positioned itself as a leader in the industry by creating a division for the manufacturing of metal reeds. The Reed Shop, located within the Plant building, was recognized as the most efficient in the country, notably gaining its expertise in reed wire from its history of rolling heddle wire.[34] Further innovations by the company included the development of custom-made shuttles which were produced by the Southern Shuttle Division in Greenville, South Carolina.

Steel Heddle Manufacturing Company loom accessories were known throughout the industry for their high quality. The heddle frames required the finest varnishes and knot-free wood. Metal plating and finishing was also paramount to the quality and durability of the loom products. Chrome-plating was utilized in the manufacturing of metal reeds to insure resistance to rust. The unique STE-HED-Co chrome-plated products were produced utilizing an innovative and patented process. In 1951, the Chrome Plating building was constructed at the Steel Heddle Manufacturing Company Complex. The need for constant temperature and amperage control in the plating tanks required a facility utilized solely for plating.[35] The Steel Heddle Manufacturing Company remained at the forefront of the

[29] Steel Heddle Manufacturing Company Loom Harness Equipment of Quality. Reference Book, Philadelphia, PA. 1950. Introduction.
[30] Ibid.
[31] Ibid.
[32] Kaufmann, Jacob. Heddle-Frame. Jacob Kaufmann, assignee. Patent 980,285. 3 Jan. 1911.
[33] Kaufmann, Jacob. Heddle-Frame. Jacob Kaufmann, assignee. Patent 1,359,252. 16 Nov. 1920.
[34] Steel Heddle Manufacturing Company Loom Harness Equipment of Quality. Reference Book, Philadelphia, PA. 1950. Introduction.
[35] Steel Heddle Manufacturing Company Loom Harness Equipment of Quality. Reference Book, Philadelphia, PA. 1950. Section 7.

textile industry with constant advances and achievements with heddles and loom harness equipment.

Criterion E: William Steele & Sons Company

By the time initial construction on the Steel Heddle Manufacturing Company Complex was underway in 1919, William Steel & Sons Company was highly regarded in Philadelphia as one of the city's most prominent industrial and commercial architecture and engineering firms. The firm was initially founded in 1864 by William Steele Sr., an Irish immigrant. At that time, Steele operated a carpentry and house building company based in North Philadelphia. By the 1880s, Steele and his son Joseph established the firm of William Steele & Son, Carpenters and Builders, a full-service construction and architectural firm. Following John Lyle Steele's entrance into the firm in 1900, its name was simplified to William Steele & Son. The name was changed a final time following the elder Steele's death in 1908 to William Steele & Son Company.[36]

Between the late-19th century and the 1930s, William Steele & Sons Company was responsible for designing and constructing "hundreds of industrial buildings, large manufacturing plants and commercial structures" in Philadelphia. The firm, under the leadership of Joseph M. Steele, promoted what was known as "The Steele Idea," a policy that led to the company's complete design of a building. In her National Register Nomination for the Harris Building in Philadelphia, historian Sheryl Jaslow outlined the Steele Idea, noting: "Staff professionals planned, purchased, and installed every item required for the new structure, including machinery and equipment."[37] Although no company records pertaining to the design of the Steel Heddle Manufacturing Company Plant Building were located, based on the Steele Idea, it can be surmised that Kaufmann's and other Steel Heddle Manufacturing Company executives were consulted during the design of the building.

Steele & Sons were noted for being at the forefront of concrete construction methods. As early as the 1890s, the firm was promoting the then modern method of steel beam and concrete construction.[38] This is further seen in a 1908 company brochure in which the company proudly touts their reinforced concrete designs, which were additionally enticing due to their fireproof materials.[39] This method of reinforced concrete construction was utilized in many of the firms buildings, including the Steel Heddle Manufacturing Company's Plant Building and the Harris Building, which was listed in the National Register of Historic Places in 2001.

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[36] Sandra L. Tatman, "Steele, William (1839-1908)," Philadelphia Architects and Buildings, accessed Dec. 3, 2021, https://www.philadelphiabuildings.org/pab/app/ar_display.cfm/62820.
[37] Sheryl Jaslow, "The Harris Building," National Register of Historic Places Nomination Form, U.S. Department of the Interior, 2001.
[38] George E. Thomas, "The Lee Tire and Rubber Company," National Register of Historic Places Nomination Form, U.S. Department of the Interior, 1984.
[39] Jaslow, "The Harris Building."

Although the William Steele & Sons Company only designed the Plant Building within the Steel Heddle Manufacturing Company Complex, that building housed the entirety of the company's manufacturing efforts throughout their time at the complex. Steele & Sons' experience in industrial designs remains highly evident at the building with their prominent use of concrete pilasters offset by large industrial steel multi-light windows and brick bulkheads. Concrete is further used as ornamentation at the primary entrance on W. Allegheny Avenue and includes the concrete set of double stairs that access the entrance, as well as the Classically themed pilasters surrounding the door and its side lights.

Conclusion

The Steel Heddle Manufacturing Company Complex retains a high-degree of architectural integrity, illustrated by its industrial design and materials, including its concrete and brick exterior, as well as its large number of multi-light industrial steel windows. As such, the building continues to convey its industrial heritage as the headquarters and primary manufacturing facility to the nation's leading manufacturer and distributor of textile loom accessories for much of the 20th century. As such, the Steel Heddle Manufacturing Company Complex is eligible for listing in the Philadelphia Register of Historic Places under Criteria A, E, and J.

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Figure 3: Steel Heddle Manufacturing Company Complex, view looking southwest.

Figure 4: Steel Heddle Manufacturing Company Complex, view looking southeast.

Figure 5: Plant, North (W. Allegheny Ave.) Elevation, view looking south.

Figure 6: Plant, Primary Entrance, view looking south.


Figure 7: Plant, East (N. 21st Street) Elevation, view looking west.

Figure 8: Plant, South (W. Lippincott St.) Elevation, view looking northwest.

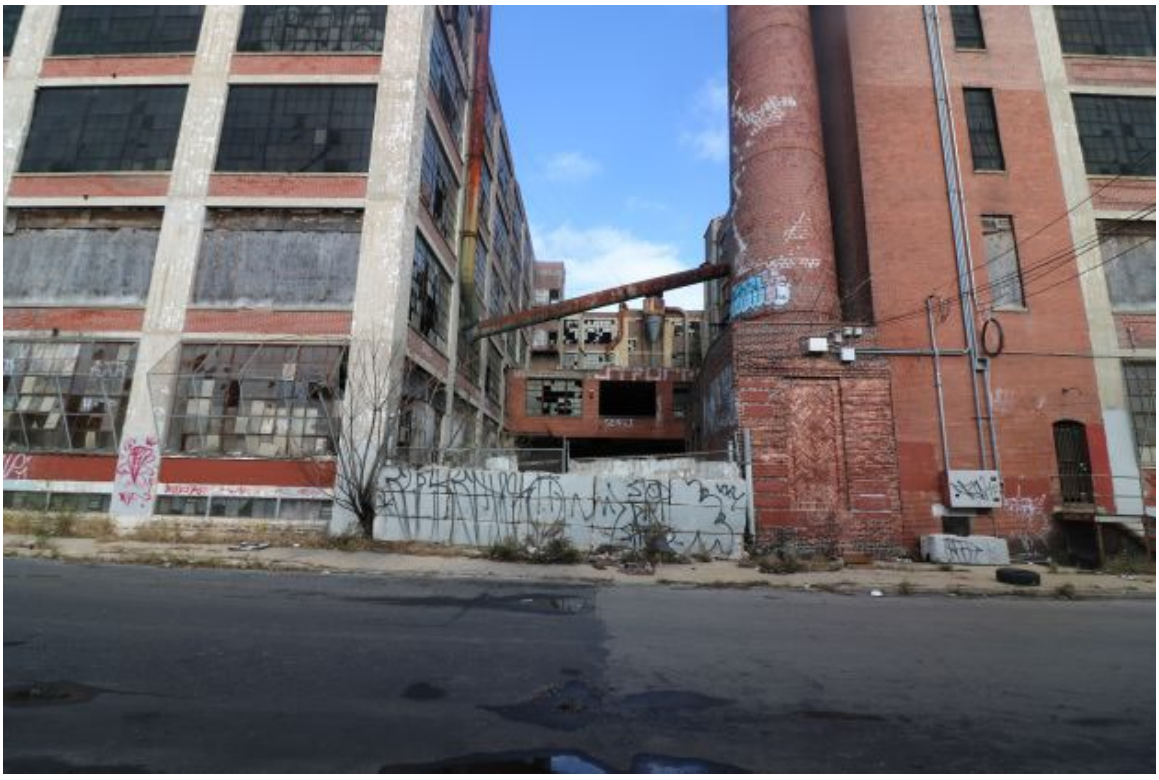

Figure 9: Plant, Courtyard, view looking north.

Figure 10: Plant, Courtyard, view looking northwest.

Figure 11: Plant, South (W. Lippincott St.) Elevation, view looking northwest.

Figure 12: Main Office Building, North (W. Allegheny Ave.) Elevation, view looking south.

Figure 13: Chrome Plating Building, North (W. Allegheny Ave.) Elevation, view looking south.

Figure 14: Lumber Storage-Garage Building, South (W. Lippincott St.) Elevation, view looking northeast.

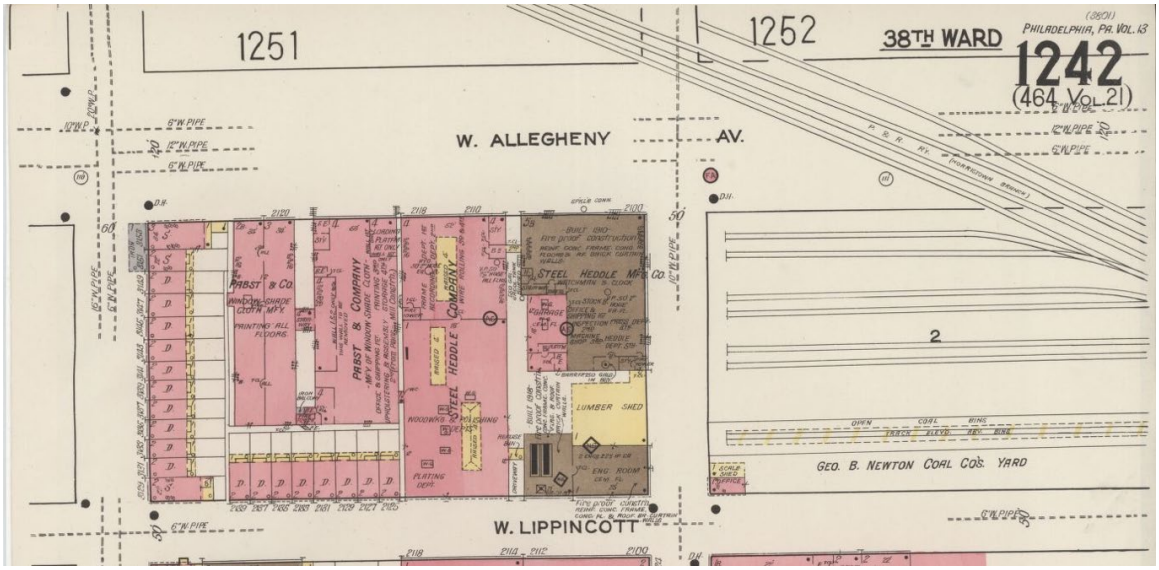

Figure 15: 1921 Sanborn Fire Insurance Map.

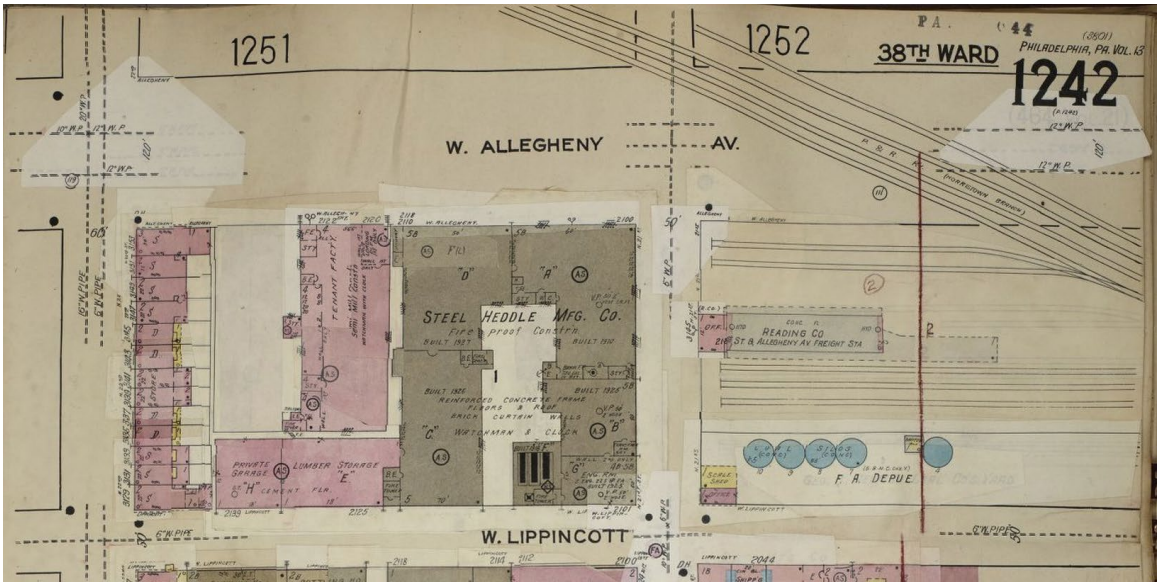

Figure 16: 1951 Sanborn Fire Insurance Map.

Figure 17: Steel Heddle Manufacturing Company Complex, Plant Building, c. 1930.

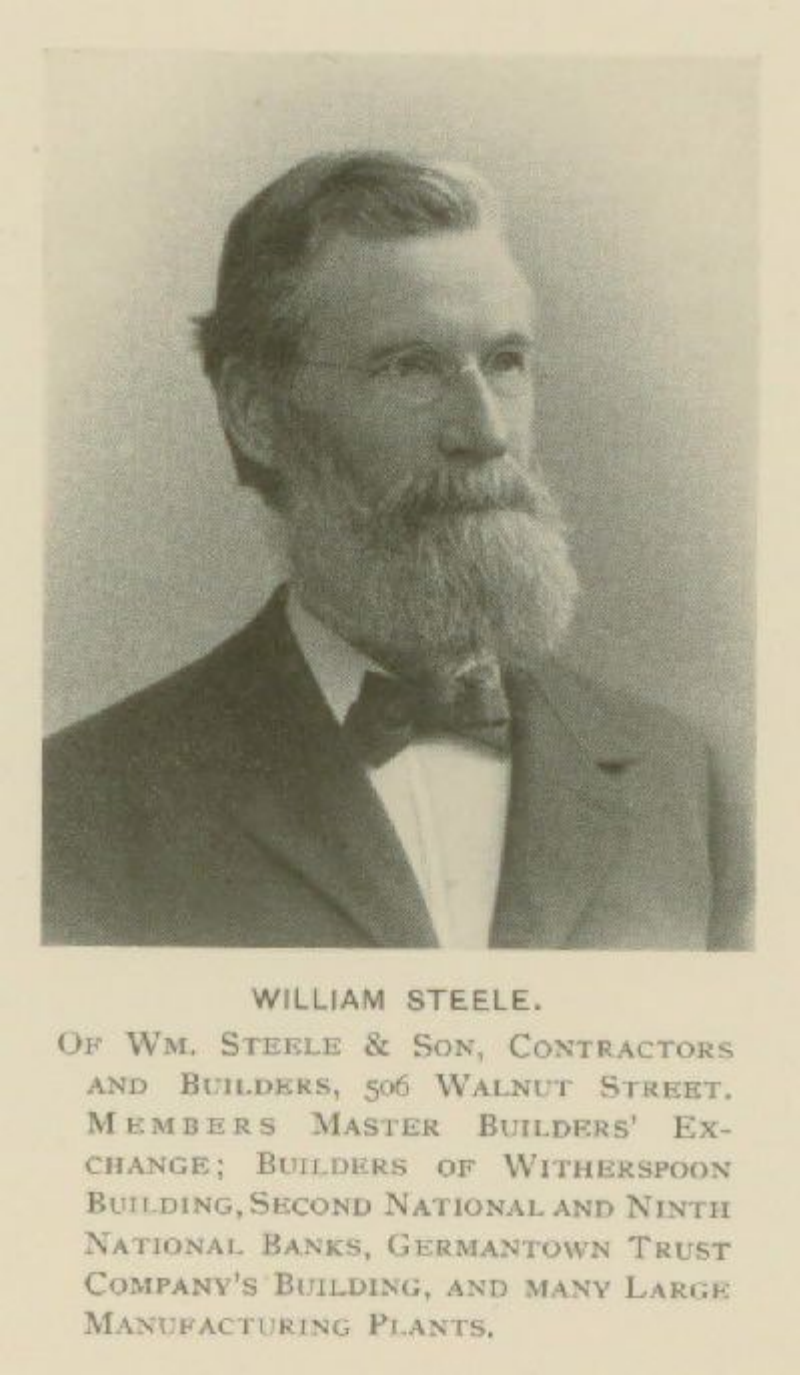

Figure 18: William Steele. (Photo Source: Philadelphia Architects and Buildings)

Figure 19: Steel Heddles. (Photo Source: Steel Heddle Manufacturing Company Product Booklet)