

**Preliminary Landmark Designation Report
Blake & Knowles Foundry
101 Rogers Street, Cambridge**



Blake & Knowles Foundry, 101 Rogers Street

CHC photo

Executive Summary

The former Blake & Knowles Foundry at 101 Rogers Street, designed by engineer Luther H. Gager in 1890, is significant for its architecture and method of construction, for its associations with the industrial development of Cambridge in the 19th and 20th centuries, and for its associations with women's labor history. It is a rare and distinctive example of a specialized early twentieth-century industrial structure. The building and its relationship to the other surviving buildings of the former Blake & Knowles complex make an important contribution to the industrial history of East Cambridge and Kendall Square.

The Historical Commission received a petition to designate the structure as a landmark on November 23, 2016. On January 5, 2017, the Commission voted to initiate a landmark designation study for the property under Ch. 2.78, Art. III of the City Code. During the one-year study period, which extended through January 4, 2018, the property was administered as though it were already a designated landmark. The Cambridge Historical Commission held a public hearing on this Preliminary Report on March 1, 2018, and continued the proceeding until April 5 to allow further public comment.

During the study period, the lessee, the Cambridge Redevelopment Authority, committed to preserving the structure and retained an architectural firm to prepare plans for renovation. Designation of the structure as a landmark will ensure that renovations are completed in an appropriate manner.

Charles Sullivan
Cambridge Historical Commission
April 1, 2018

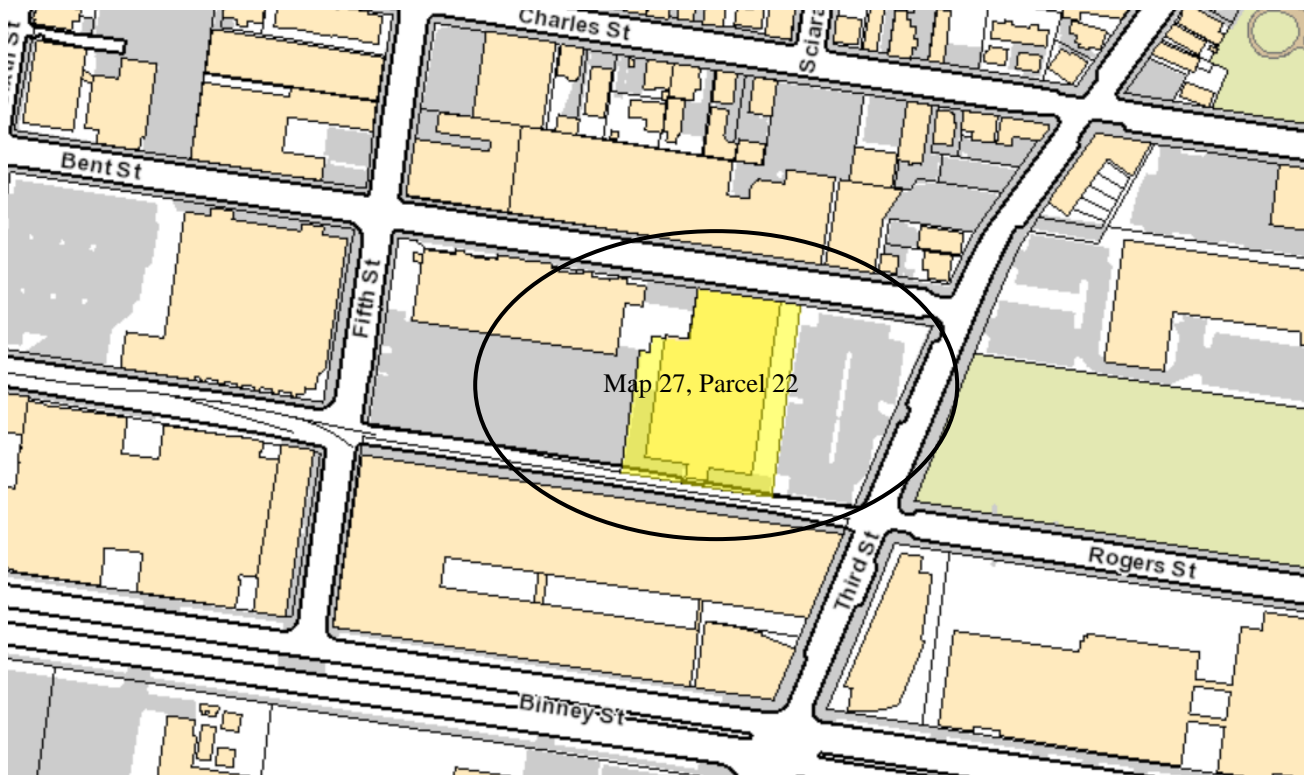
Final Landmark Designation Report

Blake & Knowles Foundry
101 Rogers Street, Cambridge

I. Location and Planning Issues

A. Address and Parcel Information

The former Blake & Knowles Foundry at 101 Rogers Street is located on the north side of Rogers Street between Third Street and Fifth Street, and runs through to Bent Street. It contains a single three-story brick building on a 37,483 square foot lot. The assessed value for the land and buildings (Map 27, Parcel 82), according to the current on-line real estate commitment list, is \$13,723,200, of which \$6,136,400 is attributable to the building.



101 Rogers Street. Assessor's Map 27/Parcel 22, City of Cambridge GIS

B. Ownership and Occupancy

The former Blake & Knowles Foundry property is owned by the City of Cambridge, which took title on January 9, 2012 (Book 58257, Page 379), and is leased to the Cambridge Redevelopment Authority (CRA). It was most recently occupied as office and studio space. The building is now empty, having undergone interior demolition and lead paint and asbestos abatement.

After an extended planning process the CRA developed a community-oriented approach to reusing the building:

The Foundry is an adaptive reuse project to build a self-sustaining center for creativity and collaboration for the Cambridge community. At the intersection of the Kendall Square Innovation District and the East Cambridge neighborhood, the Foundry building will provide space and programs for the visual and performing arts, entrepreneurship, technology, and workforce education within its historic, industrial setting. The Foundry will also help facilitate access for residents, especially underrepresented communities and adjacent neighborhoods, to the dynamic working and learning environment of Kendall Square.

The CRA has retained the architectural firm of Cambridge Seven Associates and is currently seeking an operator for the restored building.

C. Zoning

The Blake & Knowles Foundry is located in a special zoning district, PUD-4B-IA1, in which the base zoning is Industrial IA-1, which allows most types of residential dwellings, most institutional uses, offices and laboratories, some retail uses, most light industrial uses, and some heavy industrial uses. The height limit is 45', and the maximum FAR is 1.25 or 1.50, depending on use. There are no requirements for setbacks or open space. The Planned Unit Development (PUD) overlay "provides flexible zoning standards for multi-site phased development with a variety of land uses and densities. A developer may choose to conform to PUD controls in lieu of the base district requirements, but must receive a special permit from the Planning Board." The PUD-4 overlay along Rogers Street allows a retail, office, and residential uses with a maximum FAR of 2.0-3.0 and a height of 65'-85'.



101 Rogers Street, 2014

ConnectExplorer vis Cambridge GIS

D. Area Description

The Blake & Knowles Foundry stands in an area of Cambridge that was historically devoted to heavy industry. Blake & Knowles and its successor company, the Worthington Pump Works, occu-

pied three city blocks between Bent and Monroe (now Linsky) streets. Nearby industries included the Cambridge gas works, the Boston Bridge Works, two rubber companies and a chemical company. Designation of the Kendall Square Urban Renewal Area south of Binney Street in 1965 was a followed Cambridge's industrial decline, and caused the removal of all the former industrial buildings between Binney and Main streets. North of Binney industrial buildings were razed or repurposed as manufacturers left the area. In the 21st century much of the former industrial land has been redeveloped for residential or research uses.

E. Planning Issues

On November 23, 2016, the Commission received a petition requesting the initiation of a landmark designation study of the Foundry Building at 101 Rogers Street. Pending confirmation from the Election Commission that the petition contains the names of at least ten registered voters, the staff placed the matter on the agenda of the December 1 meeting of the Commission. On December 1 the Commission acknowledged receipt of the petition and voted to hold a public hearing on January 5, 2017 to decide whether to accept it. On that date, the Commission voted to initiate a landmark designation study for the property under Chapter 2.78, Article III of the City Code. During the twelve-month study period, which extended through January 6, 2018, the property was administered as though it were already a designated landmark.

As described in another section of this report, the Foundry Building entered separate ownership after the Worthington Company left Cambridge in 1927. In 2009 the Alexandria Company agreed to transfer ownership to the city in partial mitigation of zoning relief for its projects along Binney Street, and the city accepted the deed in 2012. In 2015 the city leased the property to the Cambridge Redevelopment Authority, which took responsibility for the reuse of the property and developed the following goal statement:

The Foundry will be a creative, innovative center that offers a collaborative environment with a mix of cultural, educational, manufacturing, and commercial uses. The renovated multipurpose building will be designed for flexibility and will be accessible, inclusive, and welcoming to the public. The activities within will be multigenerational and multicultural, providing a citywide and neighborhood resource that is financially sustainable for years to come.

The planning process become contentious and the citizen petition was filed in response to comments from a key party that the site should be cleared and redeveloped.

The landmark study protection period ended on January 6, 2018, and currently the Cambridge Historical Commission has no jurisdiction over the Foundry unless it receives a demolition permit application. This is not considered likely, as the CRA has stated its desire for an adaptive reuse project and retained an architect to make plans accordingly.

The Historical Commission held a hearing on the proposed designation on March 1, 2018 and received supportive public testimony from several parties, including a representative of the CRA. The Commission continued the hearing for one month to allow further public review of the Preliminary Report. The Chair of the CRA, Kathleen Born, requested a clarification that the agency had never proposed razing the building; this was added on pp. 21-22. The architects for the project, Cambridge Seven Associates, wrote in support. No adverse comments were received.

II. Description

A foundry is an industrial facility that produces metal castings. Pigs of cast iron or scrap are melted in a furnace called a cupola. When the furnace is tapped the molten metal flows into a ladle that is carried by hand or by a crane and poured into a mold. Molds are made of sand packed around a wooden pattern of the desired part and heated in a core oven before casting. When cool, the iron part is removed from the mold, cleaned, and machined for assembly. Typically, foundries are accompanied by facilities for storage of patterns and cleaning of castings. Both molding and casting are done on the foundry floor by specialized laborers. The work is labor-intensive and hazardous.



Molten iron being poured from a ladle into a mold. From *Fra Burmeister og Wain's Iron Foundry*, by Peder Severin Krøyer, 1885

The Blake & Knowles Foundry consists of a single brick building with a footprint approximately 200' deep and 125' wide. Originally it was a completely open structure containing two cupolas (furnaces) for melting iron and two smaller furnaces for heating foundry cores. Single-story side aisles flanked a central hall that accommodated a traveling crane which carried tubs of molten metal to molds for iron castings; a clerestory with windows and louvers running the length of the building provided ventilation. The floor was dirt, which would absorb spilled molten iron and minimize splashing. The framing, which was exclusively wood except in the vicinity of the cupolas, was extraordinarily heavy to accept the weight of the traveling crane. The foundry was originally connected to buildings used for the storage of molds and cleaning castings, but these were razed in the mid 20th century.



101 Rogers Street, east elevation

CHC photo, 2017

A renovation in 1983 adapted the building for office use. The basement was excavated for parking and two steel-reinforced cement floors were added for office space. The craneway framing was left in place, and constitutes the most prominent feature of the interior. A 360 sf lobby on Rogers Street

provides access. According to the Assessors the Foundry contains a total of 79,476 of gross floor area in a basement garage (23,089 sf), a first floor (23,089 sf), and a second floor (29,938 sf).



101 Rogers Street, north elevation

CHC photo, 2017



101 Rogers Street, north and west elevation. A portion of the original structure was removed and the property sold to the abutter to accommodate the cooling tower.

CHC photo, 2017



101 Rogers Street, west and south elevation

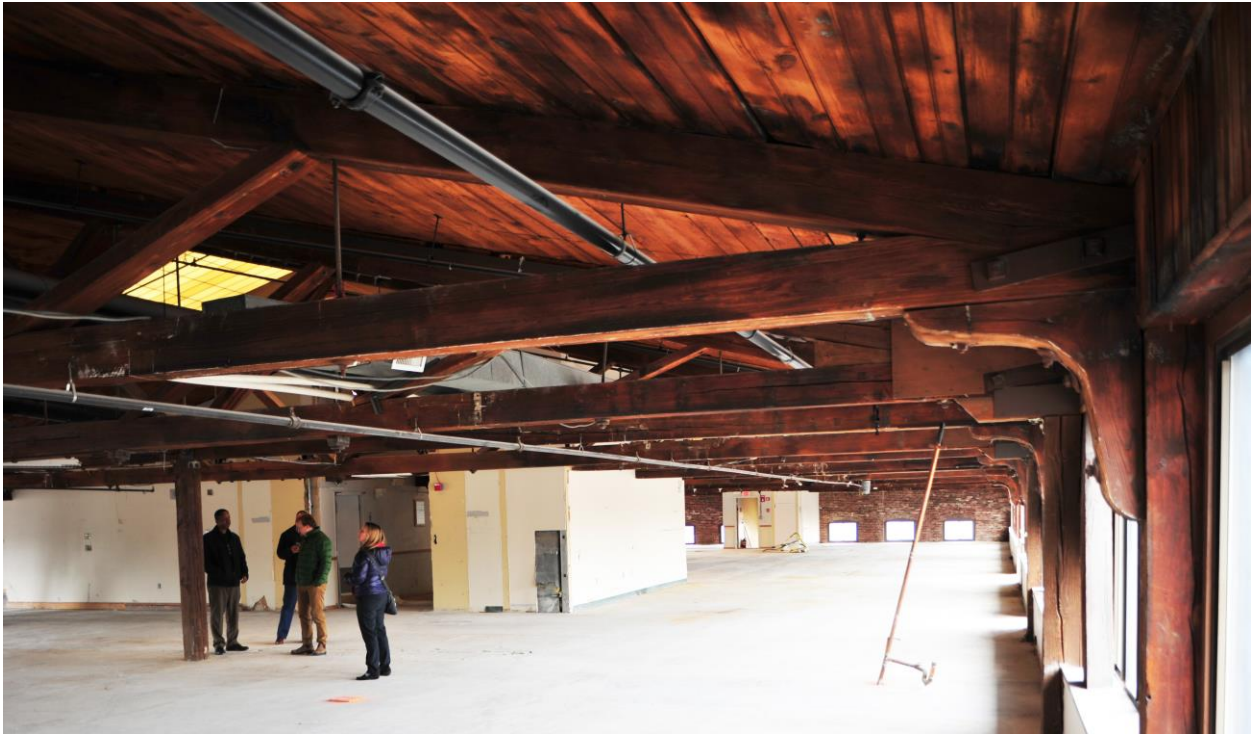
CHC photo, 2017

Interior features not subject to review:



101 Rogers Street, first floor. Roof framing under side aisle.

CHC photo, 2017



101 Rogers Street, second floor. Main roof framing.

CHC photo, 2017



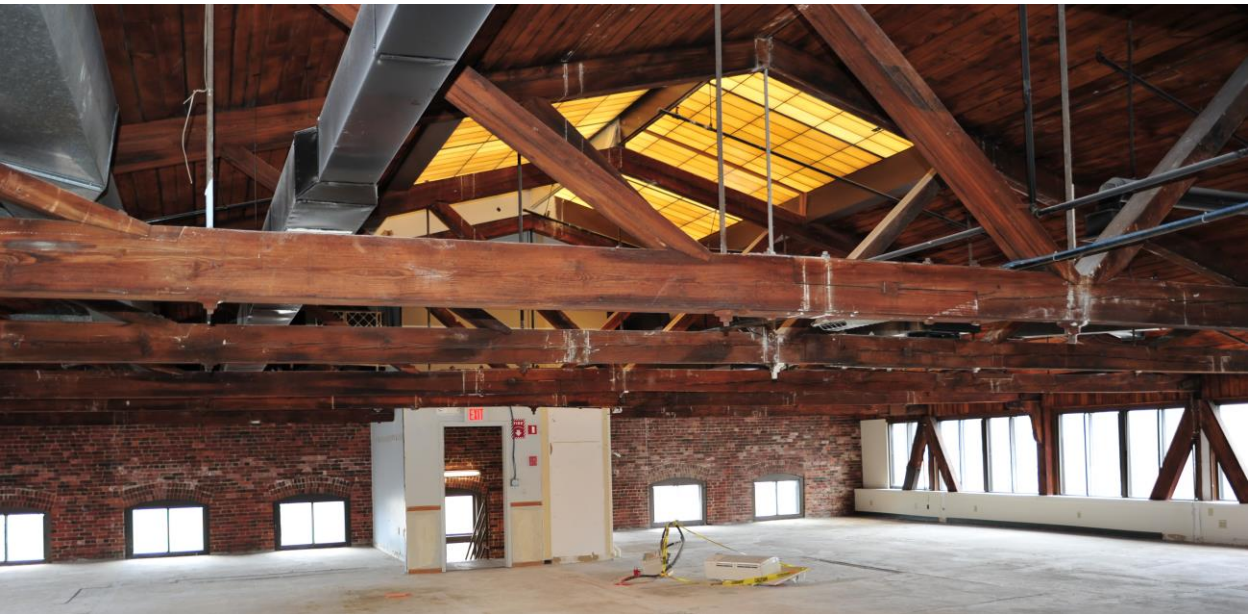
101 Rogers Street, second floor. Detail of roof framing.

CHC photo, 2017



101 Rogers Street, third floor. Craneway framing.

CHC photo, 2017



101 Rogers Street, fourth floor. Clerestory roof framing.

CHC photo, 2017

III. History of the Property

The Foundry Building is associated with one of Cambridge's most important late 19th- and early 20th century manufacturers, the Blake & Knowles Steam Pump Works and the Worthington Pump & Machinery Corporation.

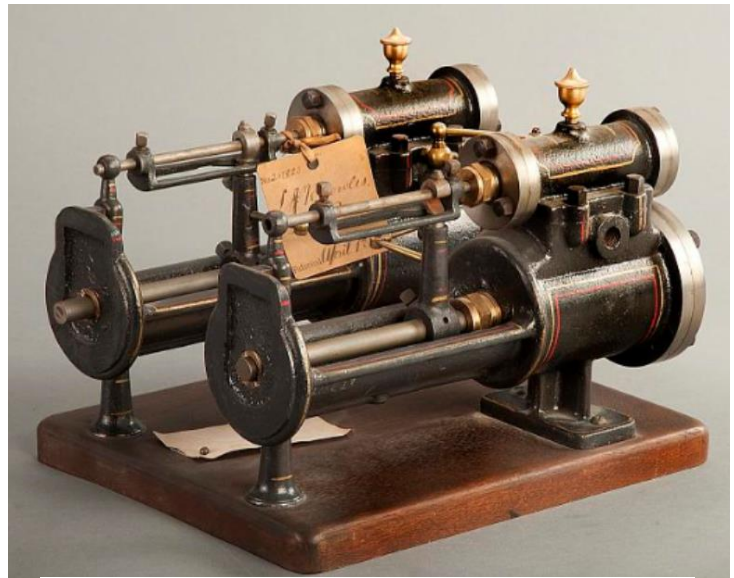
The business was founded by George F. Blake (ca. 1819-1904), a native of Maine who trained as a carpenter but became a notable inventor and mechanical engineer. In 1846 Blake went to work for Peter Hubbell, a brickmaker with yards in Cambridge and Medford. His first patent was granted for a water meter in 1851. In 1860 he invented a machine that would pulverize clay of any consistency. In 1864 he patented his most important invention, an innovative steam-powered pump designed to keep

brickyard clay pits free of water. A year later, Blake and two partners, brickyard owners Peter Hubbell and Job A. Turner, organized the firm of George F. Blake & Co. and started to manufacture water meters and pumps on Providence Street in Boston. The firm expanded several times and built a branch plant in London in 1876. By this time the company manufactured an extensive line of pumps for almost any purpose:

Boiler feed pumps, tank or light-service pumps, special fire pumps, mining pumps ... tannery pumps, brewer's mash and beer pumps, brewer's water and air pumps, marine bilge and fire pumps, marine circulating pumps, marine air pumps, wrecking pumps, oil refinery pumps, oil line pumps, blowing engines, sugar-house pumps, plantation pumps, vacuum pumps ... locomotive pumps, plunger pumps, hydraulic pumps, ... air pumps, ... acid pumps ... gas works pumps, lard or soap pumps, bleachery pumps, drainage and irrigating pumps, vinegar pumps and quarry pumps. (*Boston Globe*, Nov. 22, 1875)

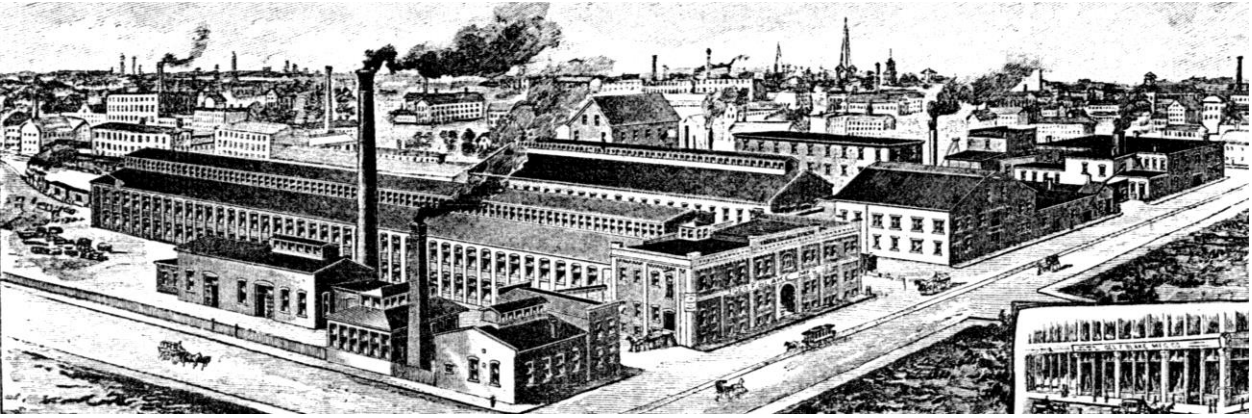
Blake's firm was reorganized as a public company in 1874, and in 1879 it acquired the Knowles Steam Pump Company of Warren, Mass. The Knowles pump works was founded by Lucius J. Knowles (1819-1894), a prolific inventor from Worcester who was best known as the inventor of a textile loom; one of his pumps is in the collection of the Smithsonian Institution.¹ The two plants were run independently, although under the same financial management, until 1897.

The George F. Blake Manufacturing Company built a small foundry on Third Street in 1883. The Boston factory on Causeway Street became increasingly inadequate, and in the late 1880s began to search for a new location. Its greatest requirement was "convenience of railroads and shipping" for raw materials and finished products. The company also needed "facilities of procuring the numerous small supplies and shop findings without delay, be easily accessible to customers ... and possess accommodation for our workmen wherein they could obtain pleasant, healthful homes" (*Cambridge Chronicle*, Dec. 21, 1889). After examining numerous alternatives, the firm decided to relocate to East Cambridge in 1889.



Knowles steam pump. Patent model, 1879.
(https://www.si.edu/object/nmah_1373611)

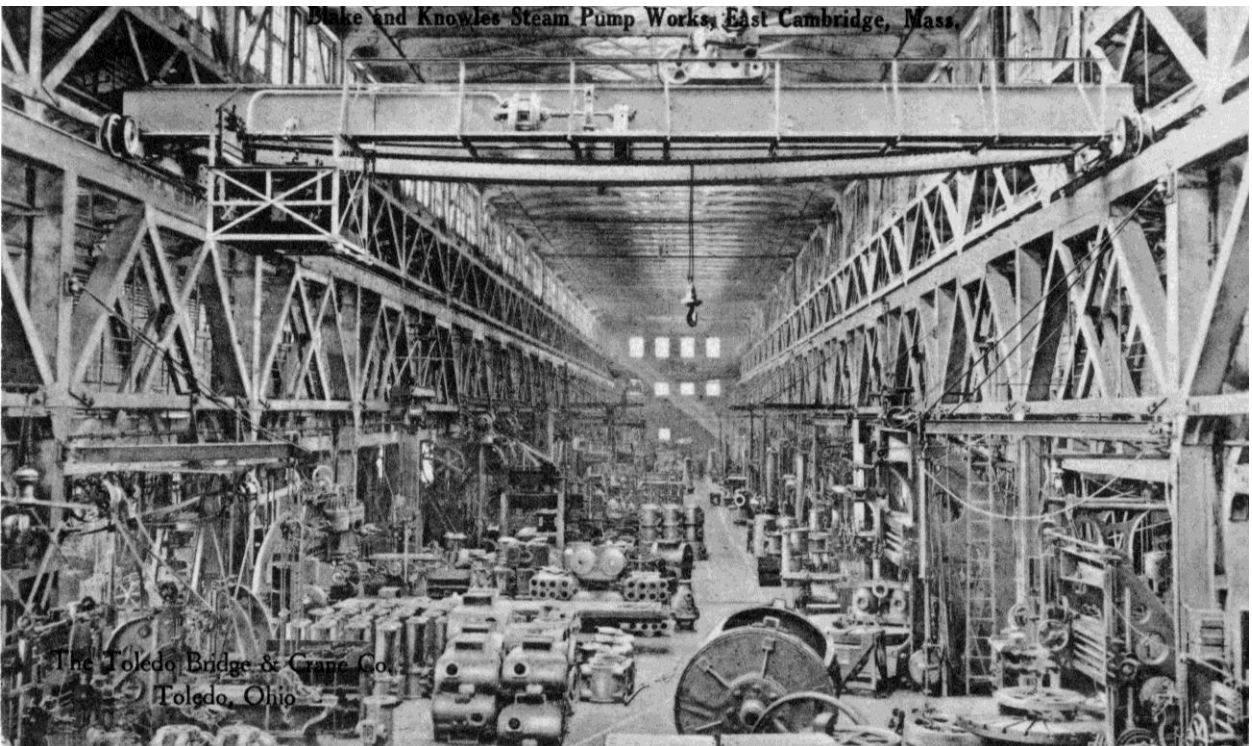
¹ "Lucius James Knowles (July 2, 1819 – February 26, 1884) originated and developed the Knowles Steam Pump Co. and the L. J. Knowles & Brother Loom Works at Warren, Massachusetts, and Worcester, Massachusetts, both of which became leading organizations in their respective fields. The Knowles steam pump was one of the best known of the direct-acting pumps, and Knowles is recognized as having contributed much to the final development and refinement of the device. He was one of the first to take up and develop the steam-actuated valve and received several patents for his inventions of improvements in valves." (https://www.si.edu/object/nmah_1373611)



Proposed George F. Blake Manufacturing Co., ca. 1888. 1=original foundry of 1883; 2=machine shop with two-story headhouse; 3=bronze foundry and blacksmith shop; 4=new foundry as originally planned, parallel to Rogers Street.

Blake purchased several large tracts from the East Cambridge Land Company. The first structure was a 400'-long machine shop on the south side of Rogers Street, with a two-story headhouse for offices on Third Street and a railroad siding entering from the west. A brass foundry and blacksmith shop went up on the corner of Binney Street at the same time. (Both of these structures are still extant; the machine shop has been adapted for apartments and housing, and the brass foundry, a Cambridge Landmark, is used for offices.)

The company announced its intention to build the present foundry in the summer of 1890. The building was under construction by October, when the Chronicle announced that it would "be supplied with an entirely new feature in foundries, two electric traveling cranes with a capacity of 35 tons each. The foundry will contain all the modern improvements, including the facilities for melting fifty tons of iron a day, which is considerably more than the average foundry can melt" (October 4, 1890). At this time the plant employed between 400 and 500 hands.



Interior of the Blake & Knowles machine shop showing the timber framing and craneway. This building was designed and built by the same firm as the Foundry, two years later. CHC postcard collection.

The foundry and an adjoining four-story brick pattern-storage facility were designed by Luther H. Gager (1853-1950), a civil engineer from Palmer, Mass. Gager, who was born in Coventry, Conn., was an 1875 graduate of Yale's Sheffield Scientific School. After graduation he worked for the U.S. Construction Co. of Palmer, a firm founded by the owners of the W.N. Flynt granite quarries in nearby Monson, Mass. After this his career can only be inferred from Census records. Through 1910 he was listed as a civil engineer with a contracting company in Palmer. In 1920, at age 67, he and his wife were living with her father's family in Hartford with no occupation listed. In 1930 they had apparently retired to Pasadena, California, although they had returned to Palmer by 1940.

The Flynt Building & Construction Co. was the contractor for the construction of the foundry and storage building. A full history of this firm could not be found, but it was founded by the sons of the Flynt quarry owner and may have initially been a vehicle for promoting its products. The Flynt firm worked in all materials and became an important regional contractor. It constructed H.H. Richardson's Palmer Union Station in 1883, Monson's Town Hall in 1884, Norwich Academy in Palmer in 1885, and a G.A.R. Hall in Palmer in 1890. The company incorporated in 1886 and found work constructing mills and factories throughout the eastern U.S. They are known to have been working in Brooklyn in 1891, and to have built factories in Hazard, Pa. in 1899, in Tennessee in 1902, and a cotton mill in South Carolina in 1902. The firm had a branch office in Charlotte, N.C. in 1921, when it declared bankruptcy in Boston.

FLYNT BUILDING AND CONSTRUCTION CO.,

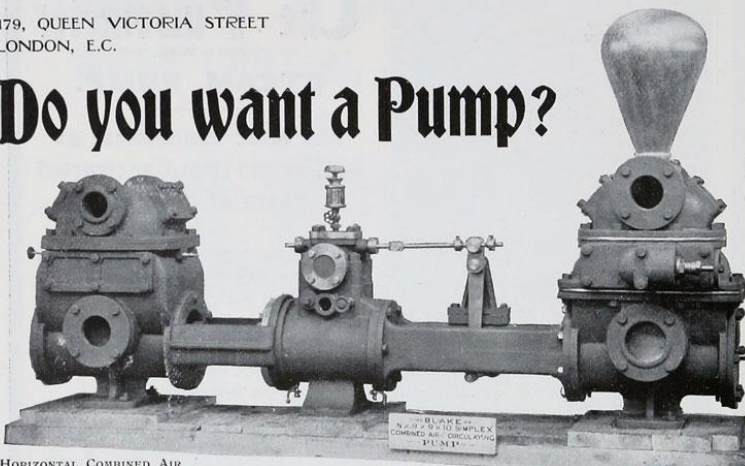
General Office, PALMER, MASS.

Contracts made for furnishing all material and labor necessary to build and finish complete MILLS, HOTELS, CHURCHES and BUSINESS BLOCKS. Also for the construction of RAILROADS, DAMS and Bridges. We make MILL WORK a Specialty. Can show some of the best Mill Work in New England. Can give the best of references, and should be pleased to correspond with parties in any locality. BUILDING MATERIAL.—We will name price on all materials used in the construction of Buildings delivered at any Railroad point.

List of Architects and Classified Directory of First Hands in the Building Trades. Holyoke, Mass. 1885

THE BLAKE & KNOWLES STEAM PUMP WORKS, Ltd.
179, QUEEN VICTORIA STREET
LONDON, E.C.

Do you want a Pump?



HORIZONTAL COMBINED AIR AND CIRCULATING PUMP.

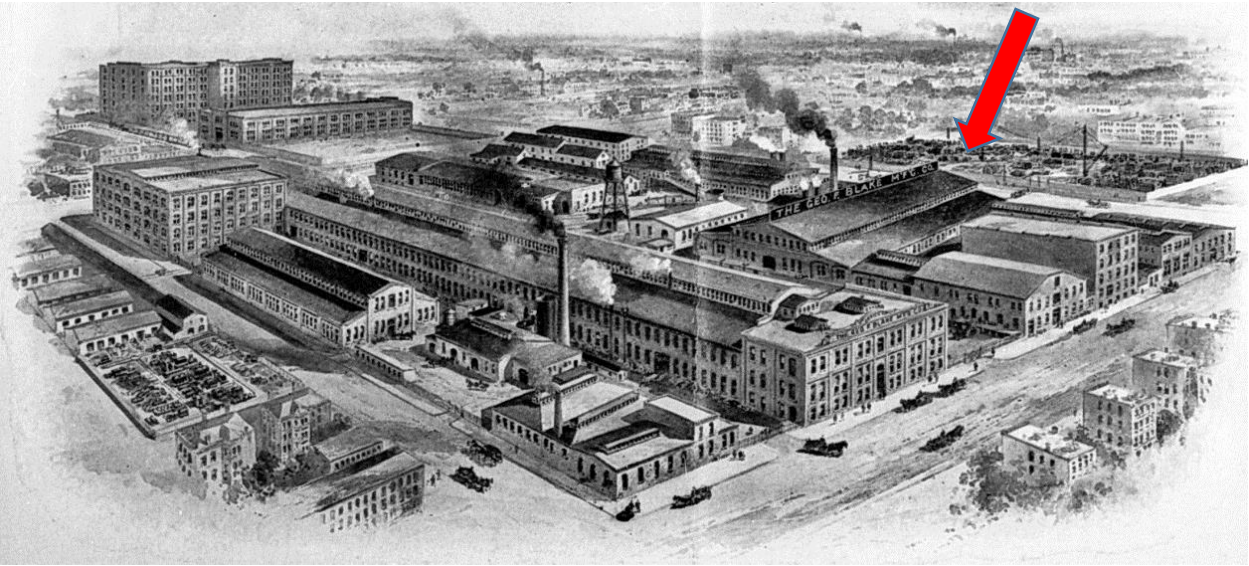
THIS may seem a somewhat unusual way of advertising Pumps, but if you do want one—no matter for what particular service—and will drop us a line, we can show you we have a good article and can suit you

Grace's Guide, February 1901

formed the International Steam Pump Co. as a holding company for five American pump manufacturers, of which Blake & Knowles and the Henry R. Worthington Co. of Brooklyn were the principal components.²

The George F. Blake Manufacturing Co. was at this time entering into a period of almost continuous expansion, with new buildings going up almost every year after 1890. George Blake himself, however, fell ill about this time and an "English syndicate" acquired control of the company; although he lived until 1904, he had no further involvement in the company. In 1896 the management closed the Knowles pump works in Warren and consolidated operations in East Cambridge. In 1897 the firms merged to become the Blake & Knowles Steam Pump & Machinery Corporation. In 1899 the syndicate

² The other firms were located in Holyoke, Cincinnati and Buffalo. Worthington had about twice the assets of Blake & Knowles, while the others were much smaller.



Blake & Knowles Works, ca. 1910. Arrow indicates Foundry Building

CHC collection

By 1896 the company employed 1,000 workers and was considered to be “one firm which has not suffered” from the depression that followed the Panic of 1893 (*Cambridge Tribune*, January 23, 1897). The consolidation with the Warren plant brought in another 800 hands, and the Flynt firm was retained to put up another addition to the main machine shop, making it 600’ in length. Labor relations were not the best, although the company was said to pay better than its rivals. . In 1901, when employment at the plant stood at 1,200, the national machinists’ union called a strike for a 9-hour day and in increase in wages. The company pre-empted the strike by locking out 600 machinists and forcing them to reapply for their old jobs; replacement workers were housed and fed at the plant for the duration of the strike.



“Lithuanians, Polanders, Portugese” at a YMCA noontime educational class at the Blake & Knowles plant, ca. 1910.

CHC collection

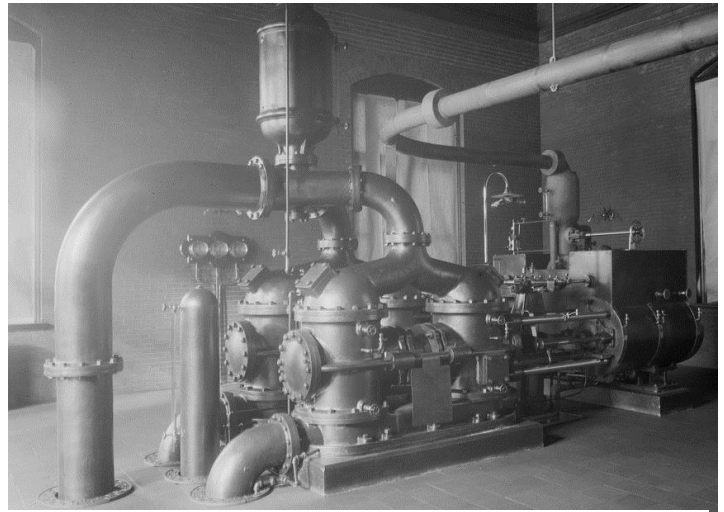
According to Marie Saccoccio, a neighborhood resident who was one of the petitioners for landmark designation, the foundry also played an important and previously unknown role in women's labor history.

East Cambridge was surely a center of industry during the turn of the century but lost in the accounts is the historic and substantial role of the neighborhood women (notably Polish) who worked in its foundries. The evidence of their controversial contribution was memorialized by *The New York Times* in three articles appearing in September, 1911, and covered by the press as far away as San Francisco. The controversy concerned women in the workplace, doing a man's job, being paid half the man's hourly wage; lifting as much as 150 lbs. on the job; stripping from waist up because of the heat of the foundry itself; working far more hours than allowed by law. The public debate was so notorious that Governor Eugene Foss authorized a raid on the premises by the State Police. Lieutenant Governor supported the action, as did Mayor Barry of Cambridge and various Congregational ministers. The debate extended to a formal meeting at Faneuil Hall. It appears the male workers from the foundries, represented by American Federation of Labor and Boston Central Labor Union, were the source of the complaints; they were undoubtedly seeking more hours for the men, rather than advocating for the increase in wages or better working conditions for women. The owners of the foundries, which included Governor Foss, asserted that the women were fully capable of doing a man's job with no mitigation necessary.

Within a year, despite an investigation that found no violation of existing law, Massachusetts passed the Employment of Women in the Core Rooms, Acts of 1912, Chapter 653, and the first Minimum Wage Act for Women in the Country, Chapter 706, Acts of 1912.

The holding company, International Steam Pump, failed in 1914, apparently in part as a consequence of the death of its principal owner, Benjamin Guggenheim, in the sinking of the *Titanic* in 1912, and was reorganized as a producing company under the Worthington name. Seven affiliated companies were reorganized as the Worthington Pump & Machinery Corporation in 1916, and the Cambridge operation was thereafter known as the Blake & Knowles works of the parent company.

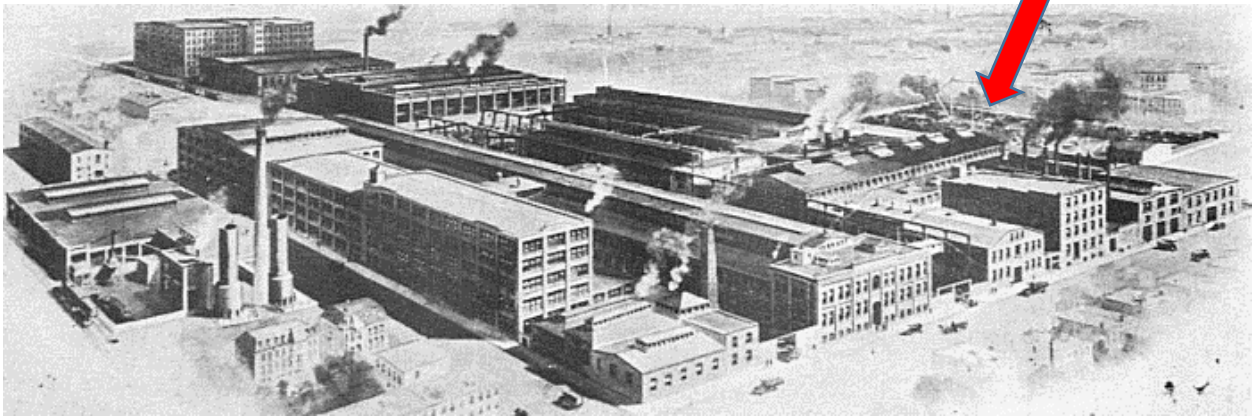
The U.S. entered World War I on April 6, 1917 and the plant began a rapid expansion to meet the needs of the U.S. Navy, which essentially commandeered production as every warship required between 25 and fifty pumps of all descriptions. The Federal government purchased additional land for the company south of Binney Street, and Aberthaw Construction put up five new buildings on Binney, Bent, and Fifth streets. One "four-story reinforced concrete building [195 Binney Street] was built, equipped and manned in four months;" another at Fifth and Binney was erected in 14 weeks. "New foundries, core-making shops



Metropolitan Water Works, Arlington Station. Blake & Knowles engine (right) and pump, 1916. Digital Commonwealth

electric plants, storage yards, coal pockets, machine shops and all the accessory buildings ... were finished in record time (*Chronicle*, March 23, 1918). The firm's original 1883 foundry had been converted to other uses, so the 1890 foundry at 180 Bent Street was supplemented by another one in a new building at the corner of Fifth and Bent.

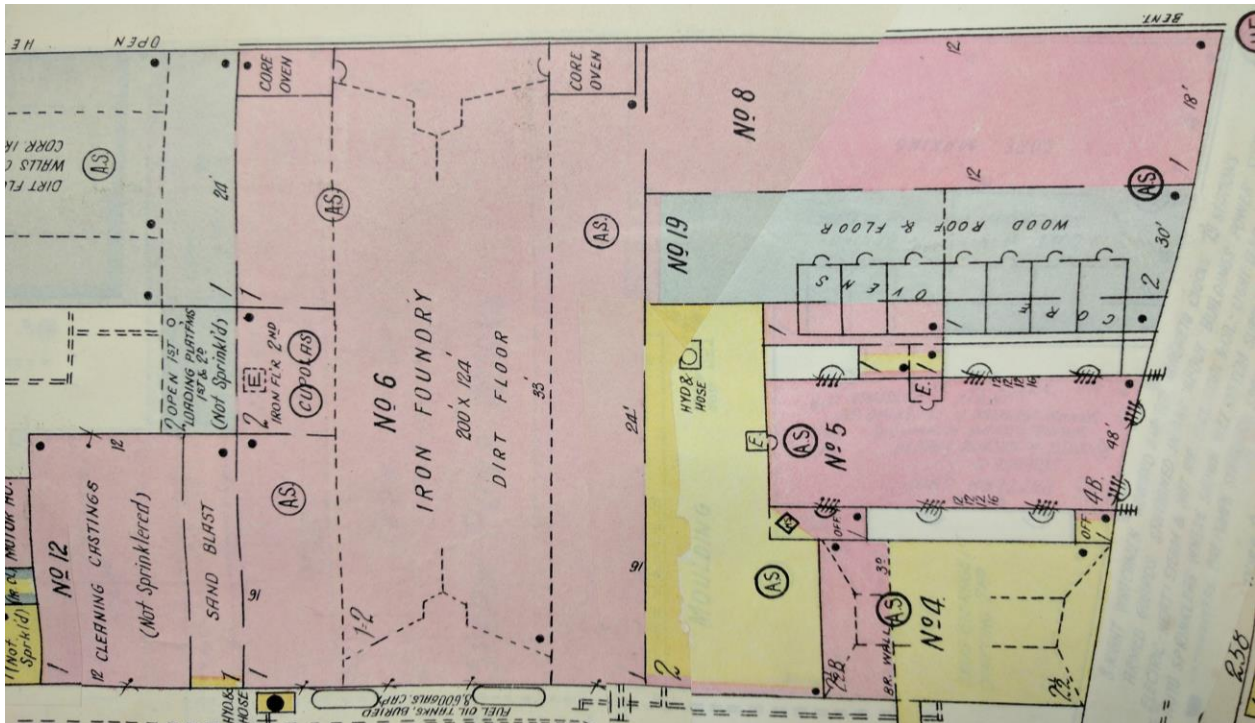
During the war employment reached a peak of 2,600 and production capacity doubled. Despite wartime conditions, or perhaps because of them, 600 machinists walked out in July 1918 to demand overtime pay for work in excess of 48 hours a week. The Navy protested that the stoppage would delay completion of 200 destroyers needed to fight German submarines, and the men returned after they were promised an eight-hour day. In October, 300 unorganized foundry moulders also struck for higher wages and joined a union. Meanwhile, the *Chronicle* reported in December that since the beginning of the war Aberthaw had erected eight new buildings and remodelled four, in additions to numerous additions. By this time the plant occupied 9 1/2 acres. It had 2,300 hands and was one of the largest employers in Cambridge.



Blake & Knowles Works, ca. 1920 after wartime construction of buildings on both sides of Binney and west of Fifth streets. *Cambridge Sentinel*, Oct. 11, 1924

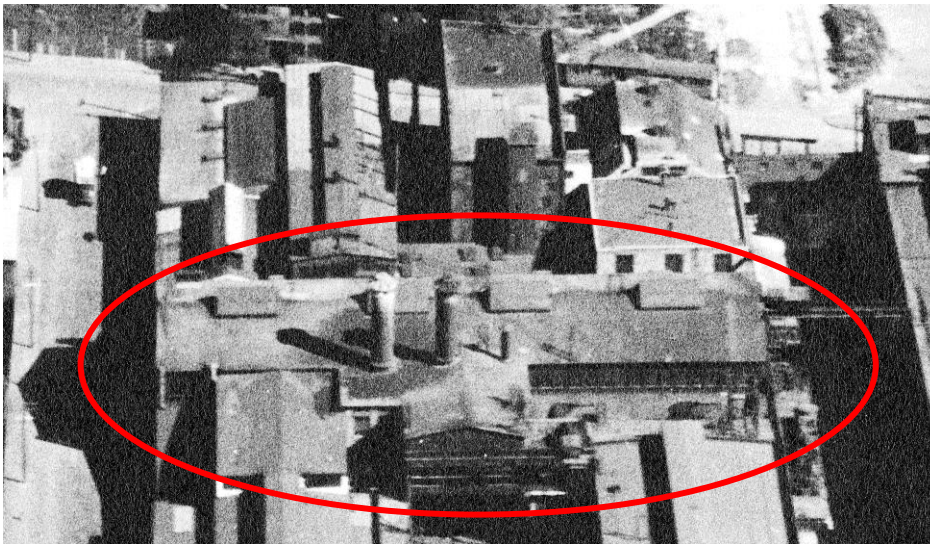
The Blake & Knowles plant entered the 1920s with "one of the best and most completely equipped shops in operation ... operating in a new, clean, well-lighted and much enlarged quarters, having a complete equipment of splendid new and up-to-date machinery" and looking forward to continued operation (*Cambridge Sentinel*, Dec. 25, 1920). The climate soon soured, however. In 1921 the company got into a dispute with the city over ownership of Rogers Street between Third and Fifth streets, which it had fenced off and been using exclusively since 1893. Meanwhile the company had filed for a tax abatement on about two acres of land that it had purchased with financing from the Federal government, which held the title. The latter controversy was still unresolved in January 1927, when Worthington announced that it would shut the Cambridge plant and move production to its other plants. Some of the 800-900 employees would be offered positions elsewhere, but most would be laid off. This was a major blow to the city in a year when the Ford Motor Co. closed its Cambridge plant and moved production to Somerville.

Worthington offered all 27 buildings for sale individually or as a group. Within two years most had been sold, and were occupied by a wide range of firms that represented as many different industries, including an asbestos warehouse, a steel distributor, and manufacturers of wooden boxes, iron beds, cedar shingles, and copper boilers.



Former Blake & Knowles foundry and associated buildings in 1930.

Sanborn Map Co.



The foundry in 1927. The cupolas are the two chimney-like structures in the center. The four vent structures atop the clerestory roof were soon removed. CHC collection.

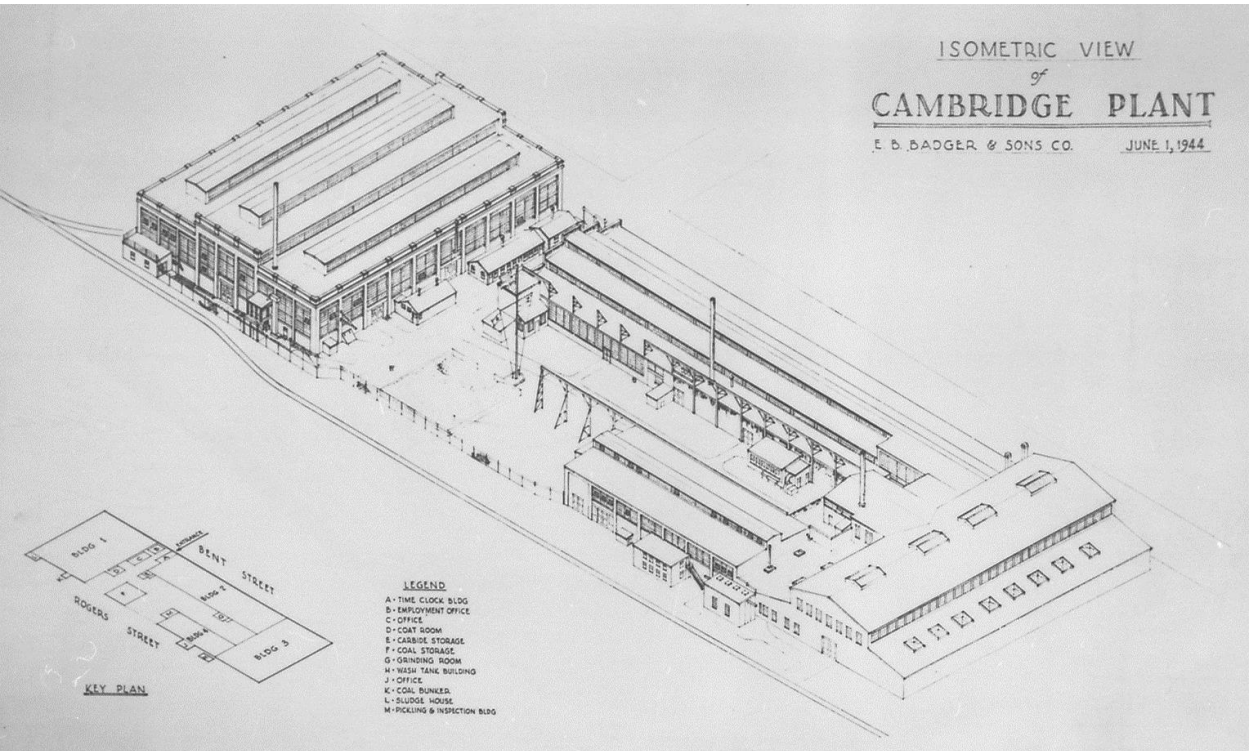
The foundry complex on Rogers and Bent streets was acquired in 1929 by a manufacturer of truck bodies, the Perin-Walsh Co. of Boston, which in 1931 employed up to 200 hands. The 1890 foundry was apparently used as storage for finished truck bodies, while production took place in the new foundry building erected at the corner of Fifth Street in 1917. A firefighter was injured in 1938 when part of the roof gave way and he fell 35 feet to the floor.

Perin-Walsh apparently defaulted and was foreclosed by the Worthington company in 1938. The foundry complex was acquired by the Badger Manufacturing Co., which in 1951 sold it to Lombard Brothers, a trucking company, which inserted overhead doors and used it as a warehouse and garage. In about 1968 Lombard leased the Foundry to the Ambassador Taxi Co. Nathaniel Slavin of the



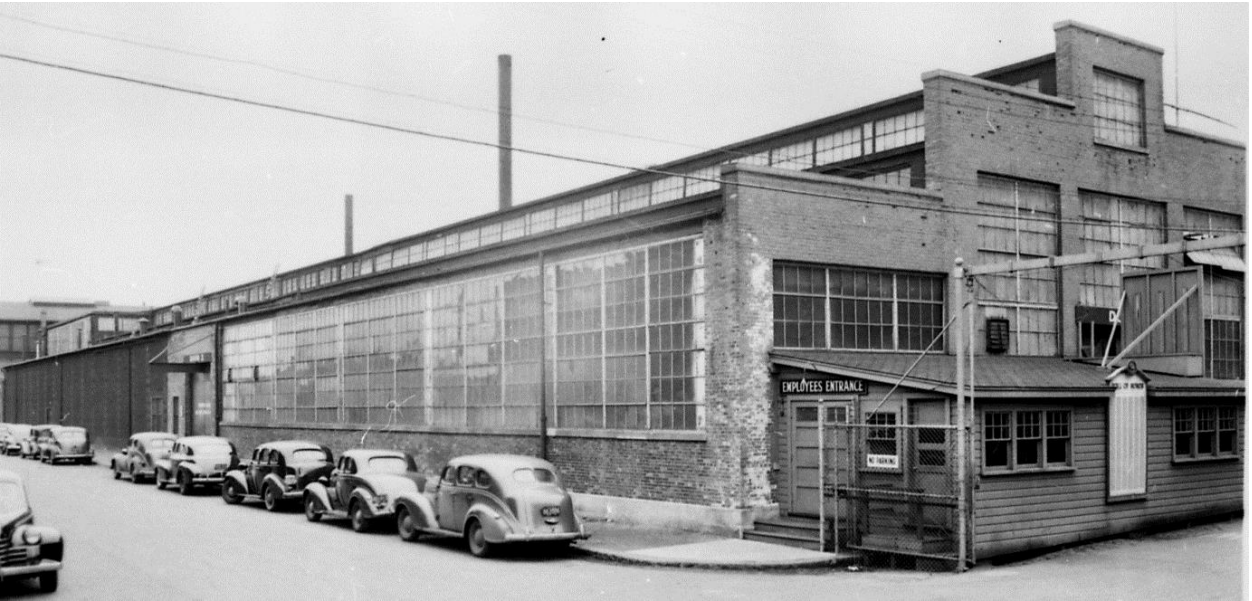
101 Rogers Street, Bent Street elevation, 1935

Engineering Dept. Collection, CHC



E.F. Badger & Sons complex, with 1890 foundry at right and the 1917 foundry at left.

Badger collection, CHC



E.F. Badger & Sons complex, 178-200 Bent Street ca. 1940.

Badger collection, CHC

Slavin Realty Trust acquired the property from Lombard in 1968 and sold the west end of the block to the New England Telephone Co., which demolished the 1917 foundry and constructed a high-rise switching complex and a parking lot next to 101 Rogers. The old Blake & Knowles buildings east of the Foundry survived until the 1970s. The original 1883 foundry and the 1890 pattern storage building were razed in 1973. The lot remained vacant until 2017, when construction began on a 70' residential condominium. The remaining Blake & Knowles buildings (except for the brass foundry on the corner of Third and Binney streets) were acquired by the United-Carr Fastener Co. about 1951 and were used for manufacturing purposes until 1997, when they were adaptively reused for rental housing.



101 Rogers Street, 1969. The former pattern shop at right was razed in 1970.

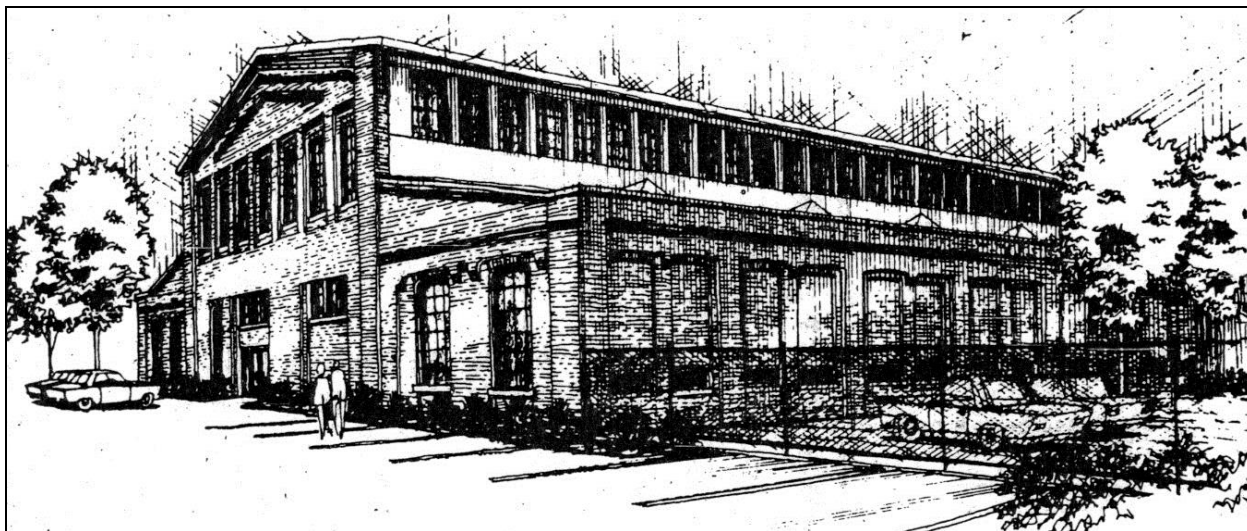
CHC staff photo



101 Rogers Street, 1970.

CHC staff photo

Meanwhile, the 1890 foundry continued in use as a taxi garage until in 1982 Exeter Equities, a Boston investment firm, announced that the building would be renovated for office space while retaining its 19th century exterior appearance and wood framing. The project was designed by Howard Rockstrom Associates of Carlisle, Mass. a firm whose principal had earlier been employed by the Flatley Company, a Boston developer and property owner. Little could be learned about Rockstrom beyond his dates (1931-1986) and a possible project on Sargent Wharf in Boston in the mid-1970s. A building permit (80194) was issued on August 2, 1982 to "remodel and erect three additional interior floors" at a cost of \$650,000; the contractor was the J. Abrams Co. of Brookline. The prime tenant was First Phone, a Boston-based telecommunications carrier which occupied the building in July 1983 at the conclusion of a project that was said to have cost \$2.7 million.



101 Rogers Street adaptive reuse proposal (1982, Howard Rockstrom Associates, architects). *Cambridge Chronicle*, Sept. 16, 1982

Another permit (031771) was issued in 1982 for \$150,000 in alterations designed by Jung/Brannen Associates. In 1988 a new owner, Rogers Bent Realty Trust, constructed a new entrance for \$250,000 and changed the address from 180 Bent Street to 101 Rogers. Over the next four years eleven building permits were issued for partitions and tenant fit-out work.

By 2009 ownership of the Foundry had passed to Alexandria Real Estate Equities, Inc., which had assembled several building and about twelve acres of land for a life sciences development. As a condition of city approval in 2010 Alexandria agreed to transfer ownership of the Foundry to the City of Cambridge, with the stipulation that at least 10,000 square feet of the then 52,000 square foot building be dedicated to community use. By 2014 the City Council was actively discussing future uses and working with the Cambridge Redevelopment Authority to draft a demonstration plan. In 2015 the city leased the property to the CRA for 50 years and appropriated \$6 million for improvements that were expected to cost \$12 million. Interior demolition and abatement cleared all the interior partitions and fixtures, leaving intact the shell of the building and the floors installed in 1983.

In August 2016 the CRA tentatively designated CIC/Graffito SP, working in association with Hacin+Associates, as the Kendall Square Foundry Development Partners for the revitalization of the building. However, the planning process became contentious and in November 2016 an important participant in a community meeting mentioned the possibility of a "nuclear option" that would involve demolition and redevelopment of the property. The Cambridge Historical Commission re-

ceived a citizens' petition requesting initiation of a landmark designation study on November 23, 2016, and voted to initiate the study on January 5, 2017.

Late in December 2016 the CRA halted the development process and began a new search for a way forward. By March 2017 the city and the CRA were discussing a new plan that would require a \$25 million investment to create a self-sustaining operation that would include about 15,500 square feet of commercial office space (out of a total square footage then calculated at 37,500 sf) and house a theater, a café, an art gallery, and 5,000 sf for nonprofits. This plan was refined to include maker space and job training in science, technology, engineering and math, and in September 2017 the City Council unanimously approved the plan and the associated funding, now estimated at up to \$30 million. The CRA retained Cambridge Seven Associates in January 2018, and in February advertised for an operator to manage the building when completed in 2020.

IV. Significance of the Property

The former Blake & Knowles Foundry at 101 Rogers Street, designed by engineer Luther H. Gager in 1890, is significant for its architecture and method of construction, for its associations with the industrial development of Cambridge in the 19th and 20th centuries, and for its associations with women's labor history. It is a rare and distinctive example of a specialized early twentieth-century industrial structure. The building and its relationship to the other surviving buildings of the former Blake & Knowles complex make an important contribution to the industrial history of East Cambridge and Kendall Square.

V. Relationship to Criteria

A. Article III, Chapter 2.78.180 a.

The enabling ordinance for landmarks states:

The Historical Commission by majority vote may recommend for designation as a landmark any property within the City being or containing a place, structure, feature or object which it determines to be either (1) importantly associated with one or more historic persons or events, or with the broad architectural, aesthetic, cultural, political, economic or social history of the City or the Commonwealth or (2) historically or architecturally significant (in terms of its period, style, method of construction or association with a famous architect or builder) either by itself or in the context of a group of structures . . .

B. Relationship of Property to Criteria

The former Blake & Knowles Foundry meets landmark criterion (1) for its important associations with the economic history of the City and for its associations with women's labor history. The property also meets criterion (2) as a rare example of its type in Cambridge and for its association with civil engineer Luther H. Gager.

VI. Recommendations

A. Purpose of Designation

Article III, Chapter 2.78.140 states the purpose of landmark designation:

preserve, conserve and protect the beauty and heritage of the City and to improve the quality of its environment through identification, conservation and maintenance of . . . sites and structures which constitute or reflect distinctive features of the architectural, cultural, political, economic or social history of the City; to resist and restrain environmental influences adverse to this purpose; [and] to foster appropriate use and wider public knowledge and appreciation of such . . . structures . . .

B. Preservation Options

Landmark designation or donation of a preservation restriction are two options for the permanent long-term protection of the former Blake & Knowles Foundry.

While the immediate threat of demolition that motivated the landmark designation study has receded, options for preservation of the exterior are still being discussed. Landmark designation will allow the Cambridge Historical Commission to review and approve alterations to the exterior and ensure that they are appropriate to the character of the building as well as consistent with its future use.

A preservation restriction could have the same effect as a landmark designation in preserving the exterior of the Foundry, but could also be drafted to protect significant interior features such as the timber framing. However, a preservation restriction would require the consent of the owner, the City of Cambridge, as well as the Cambridge Redevelopment Authority, and would have to involve a non-city party to hold and administer it. From a procedural point of view this is not a practical approach.

No plans are underway for an historic district or neighborhood conservation district study in the area surrounding the property.

While the Foundry is not listed on the National Register of Historic Places, the company's manufacturing buildings on the block bounded by Third, Sciarappa, Rogers and Binney streets were listed on the National Register of Historic Places in 1997, while the brass foundry has been protected by a preservation restriction since 2001. The Foundry Building is the only Blake & Knowles building that is not designated in some fashion. National Register listing alone does not protect and preserve buildings in the absence of Federal or State funding or permits, but is a useful planning tool and can provide tax benefits for private party restoration investments. The Cambridge Historical Commission intends to nominate the building to the Register at some point in the future.

In the absence of landmark designation, a proposal to demolish the Foundry would trigger the Historical Commission's review under the citywide demolition delay ordinance, but this provision of Ch. 2.78 provides only a delay mechanism. However, there would appear to be no obvious threats to the building once the currently proposed adaptive reuse project is completed.

C. Staff Recommendation

The staff urges the Commission to find that the former Blake & Knowles Foundry meets the criteria for landmark designation. Based on this finding, the Commission could either vote to recommend that the City Council designate the property as a protected landmark under Article III, Chapter 2.78, or extend the study period until the adaptive project is completed, at which point the Commission could decide to apply for permanent designation or allow its jurisdiction to lapse.

VII. Standards and Criteria

Under Article III, the Historical Commission is charged with reviewing any construction, demolition or alteration that affects the exterior architectural features (other than color) of a designated landmark. This section of the report describes exterior architectural features that are among the characteristics that led to consideration of the property as a landmark. Except as the order designating or amending the landmark may otherwise provide, the exterior architectural features described in this report should be preserved and/or enhanced in any proposed alteration or construction that affects those features of the landmark. The standards following in paragraphs A and B of this section provide guidelines for the treatment of the landmark described in this report.

A. General Standards and Criteria

Subject to review and approval of exterior architectural features under the terms of this report, the following standards shall apply:

1. Significant historic and architectural features of the landmark should be preserved.
2. Changes and additions to the landmark which have taken place over time are evidence of the history of the property and the neighborhood. These changes may have acquired significance in their own right and, if so, that significance should be recognized and respected.
3. Deteriorated architectural features should be repaired rather than replaced.
4. When replacement of architectural features is necessary, it should be based on physical or documentary evidence.
5. New materials should, whenever possible, match the material being replaced in physical properties, design, color, texture, and appearance. The use of imitation replacement materials is generally discouraged.
6. The surface cleaning of a landmark should be done by the gentlest possible means. Sandblasting and other cleaning methods that damage exterior architectural features shall not be used.
7. Additions should not destroy significant exterior architectural features and should be recognizable as new architectural elements, without compromising the original building's historic aspects, architectural significance, or the distinct character of the landmark, neighborhood, and environment.
8. Additions should be designed in a way that, if they were to be removed in the future, the essential form and integrity of the landmark would be unimpaired.

B. Suggested Review Guidelines

1. Site Development.

There appears to be little or no further as-of-right potential for development on the site, and almost no space in which the building could be expanded.

2. Alterations

The brick shell and roof profile of the building are intact and should not be altered without review. The cross-gabled wing on the west side that formerly housed the cupolas has lost its integrity and may be reclad, subject to the Certificate of Appropriateness process.

a. Exterior surfaces

Exterior materials should be preserved insofar as practicable. Special care should be taken to protect and maintain the brick masonry. Repointing the mortar joints should be done with special care to maintain the strength, color and texture of the mortar and the profile of the joints.

b. Fenestration

Many historic window openings have been bricked up or altered, and consideration should be given to restoring these to their original configuration. No historic window sash remain in the building. New windows should replicate historic patterns as closely as practicable while achieving energy efficiency goals.

Large overhead doors (or the remnants of them) on Rogers and Bent streets are disfiguring. Consideration should be given to re-establishing the original openings where possible.

The ca. 1983 entry on Bent Street is inappropriate and should be reconfigured

c. Roof

The roof and clerestory are significant features of the building. New penetrations should be minimized. Existing bubble skylights should be replaced with flat profile units. Rooftop HVAC equipment, if required, should be grouped to minimize any visual intrusion. Solar panels should be mounted coplanar and close to the roof.

d. Site development

The entry on Rogers Street is not inappropriate, but it is not significant and could be altered (subject to CHC review and approval) for functional or code compliance reasons. The former entry on Bent Street could be re-established in a more appropriate fashion.

e. Interior features

Although interior features are not subject to the jurisdiction of the Cambridge Historical Commission, the owner should be encouraged to preserve structural materials and surfaces that represent the industrial history of the building.

VIII. Proposed City Council Order

ORDERED:

That the former Blake & Knowles Foundry at 101 Rogers Street, Cambridge, be designated as a protected landmark pursuant to Chapter 2.78, Article III, Section 2.78.180 of the Code of the City of Cambridge, as recommended by vote of the Cambridge Historical Commission on December 4, 2014. The premises so designated is the land defined as Parcel 82 on assessor's map 27 and the building thereon and the premises described in a deed recorded in January 9, 2012 (Book 58257, Page 379) at the South Middlesex Registry of Deeds.

This designation is justified by the important architectural and historical associations the property embodies as a substantially intact late-19th century foundry associated with a once-prominent Cambridge industry, the Blake & Knowles Steam Pump Works, and for its important associations with women's labor history.

The effect of this designation shall be that review by the Cambridge Historical Commission and the issuance of a Certificate of Appropriateness, Hardship or Non-Applicability shall be required before any construction activity can take place within the designated premises or any action can be taken affecting the appearance of the premises, that would in either case be visible from a public way. In making determinations the Commission shall be guided by the terms of the Final Landmark Designation Report, dated _____, 2018 with respect to the designated premises, by Section VII, Standards and Criteria of said report, and by the applicable sections of Chapter 2.78, Article III, of the Cambridge Municipal Code.

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