United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See Instructions in Guidelines for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "X" in the appropriate box or by listing the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property
   historic name (Former) Nebel Knitting Mill
   other names/site number

2. Location
   street & number 101 West Worthington Avenue
   city, town Charlotte
   state North Carolina code NC
   county Mecklenburg code 119
   zip code 28203

3. Classification
   Ownership of Property Category of Property Number of Resources within Property
   □ private building(s) Contributing
   □ public-local district
   □ public-State site
   □ public-Federal structure
   □ object
   □
   □
   □
   □
   □
   □

   Number of contributing resources previously listed in the National Register

4. State/Federal Agency Certification
   As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property □ meets □ does not meet the National Register criteria. □ See continuation sheet.

   Signature of certifying official
   State or Federal agency and bureau
   Date:

   In my opinion, the property □ meets □ does not meet the National Register criteria. □ See continuation sheet.

   Signature of commenting or other official
   State or Federal agency and bureau
   Date:

5. National Park Service Certification
   I hereby certify that this property is:
   □ entered in the National Register.
   □ See continuation sheet.
   □ determined eligible for the National Register. □ See continuation sheet.
   □ determined not eligible for the National Register.
   □ removed from the National Register.
   □ other, (explain):

   Signature of the Keeper
   Date of Action
6. Function or Use
Historic Functions (enter categories from instructions)
INDUSTRY/PROCESSING/EXTRACTION-mfg facility
INDUSTRY/PROCESSING/EXTRACTION-waterworks

Current Functions (enter categories from instructions)
COMMERCE/TRADE--restaurant
COMMERCE/TRADE--professional
WORK IN PROGRESS

7. Description
Architectural Classification (enter categories from instructions)
Other: Industrial vernacular

Materials (enter categories from instructions)
foundation brick
walls brick
roof other: built-up rubber and gravel
other concrete
stone

Describe present and historic physical appearance.

See continuation sheet
Physical Description

Constructed in 1927 and expanded in 1929, the (former) Nebel Knitting Mill, manufacturer of ladies' fine quality, full-fashioned hosiery until 1968, is the most intact hosiery mill in Charlotte. The mill complex stands at 101 West Worthington Avenue, on a parcel bounded by West Worthington, Camden Road, Hawkins Street, and a service alley. In addition to the 1927-1929 mill, the complex includes a 1946 expansion—a separate building originally attached to the 1927 section by a covered truck passageway. This 1946 building, with distinctive Art Moderne elements of style, has been detached from the 1927-1929 mill during the mill's adaptive rehabilitation, and is not being proposed for nomination to the National Register.

Noted Charlotte textile mill architect and engineer Richard C. Biberstein designed the 1927-1929 Nebel Mill. Extant architectural specifications for the 1929 section indicate that Biberstein and William Nebel, founder of the Nebel Knitting Company, intended this section to match the 1927 building in materials and detailing (Biberstein Collection). Integrated as one two-story building approximately 204 feet across the facade and 182 feet deep, and sharing similar materials and decorative elements, the 1927-1929 mill is built around an open, 6,784 square-foot courtyard. Since the knitting of fine, full-fashioned, silk and synthetic hosiery required superior eyesight and good light, it is likely the mill was designed with this configuration to allow for maximum natural light during the day shifts. Notes by the architect indicate that William Nebel specified that the mill should be wide enough for two knitting machines; the layout of the mill, then, gave each knitter a large window to light his machine.

The 1927 section is five bays wide and covers the northwest side of the courtyard; the 1929 portion, forming the other three sides of the courtyard, is ten bays wide. Both sections have subtle polychrome, wire-cut facing brick, and concrete and steel construction. The 1927 portion has a stepped-parapet roofline with concrete coping, while the mill's 1929 part has concrete coping and a simple, crenelated roofline with the crenelation most defined above
the entrances and along the stair tower at the southeast corner. Fenestration in both sections consists of large multi-paned steel frame windows, some of which have been bricked in on the first story. The bays are defined by projecting brick pilasters with stone caps. These pilasters alternate between rising to full height to form the crenelation, and rising to the top of the second story windows where the caps are slanted. A water table of curved cast-concrete runs beneath each window bay along the Worthington Avenue side. The first story bay on the southeast end of the rear (southwest) elevation is of glass block. Restrained decorative elements include: simple door surrounds of single rows of headers with concrete corner blocks; diamond-shaped concrete panels; date stones centered in solid brick bays in both the 1927 and 1929 sections; stone and concrete window sills; stone pediments above the main entrances in both sections engraved with "NEBEL KNITTING CO.;" and decorative copper canopies sheltering the two doorways in the 1929 portion.

The exterior as well as the interior of the mill has recently undergone renovations and remodelling for use as a restaurant owned by The Spaghetti Warehouse, Inc., and for office space. The restaurant is located on the first floor of the 1929 portion of the mill, while two office suites now occupy the ground level of the 1927 section. Work is in progress to install additional professional offices in both floors of the 1927 mill and on the second floor of the 1929 section. During this ongoing renovation, the mill's significant architectural features are being preserved, repaired, or replaced for purposes of the preservation tax credits. While first-floor windows along the Camden Street elevation remain bricked in, other previously bricked-in windows on both portions of the mill have been replaced by multi-paned windows that closely match the original fenestration. The principal wood, batten double doors, which lead into the 1929 section of the complex were deteriorated, and have been replaced by wood doors of similar design.

The interior of the mill originally consisted of mainly open space with regularly spaced steel columns. The remodelling of the first floor of the 1929 section for the restaurant has divided the space into additional rooms for
dining, barroom, service, and storage uses. These rooms typically have gypsum board walls with plywood or beaded-board veneers. The main dining room dominates the interior, and leads to an upper dining room area that opens onto the courtyard. The mill's original cafeteria, located along the east side of courtyard, has been remodelled and subdivided into an entry area and vestibule. The vestibule is finished with beaded-board walls. The original concrete floors on the ground level of the 1929 portion of the mill have been covered with broken quarry tile in the entry areas. Floors have been carpeted in the dining rooms and manager's office, and remain exposed in the service and storage areas. The exposed structural system, pipes, ductwork, and supporting steel beams have been boxed with sawn lumber to meet fire codes. The original tongue-and-groove ceilings remain largely intact throughout both sections of the mill, and the majority of brick walls have been gently sandblasted to remove white paint, and will remain exposed.

In the first floor of the 1927 section of the mill, two office suites, foyer, lobby, and a connecting corridor have been installed and work is in progress to add two additional offices. Full-height, gypsum-board partitions constitute the principal dividing walls. The exposed steel beams in these areas have been wrapped with fire rated gypsum board, boxed with rough sawn lumber, and painted. The foyer's concrete floor has been covered with quarry tile, while the lobby's floor has been covered with hardwood flooring, and other rooms have been carpeted. Existing sliding metal doors that connect the lobby with the stairwell remain intact. The mill's upstairs is currently used for storage by the restaurant, but plans have been made to convert this space into additional office suites. The upstairs consists of a large open space and small partitioned rooms, and has wood floors.

The courtyard of the 1927-1929 mill complex contains two ca. 1927 contributing structures, a pump house and a water tower. The pump house is a one-story, brick-veneered, conical-roofed facility that measures about eight feet on each side. The cylindrical, 50,000-gallon, steel water tank is elevated ninety feet on a steel frame, and capped by a conical roof. The courtyard also contains the boiler.
room, which is attached to mill's south interior wall. Both the pump house and the water tower have been retained. The tower has been sandblasted and its tank repainted green and white, and inscribed with "THE SPAGHETTI WAREHOUSE." A wood gazebo has been constructed below the water tower. Three concrete-block storage buildings erected in courtyard in the 1950s were razed during the rehabilitation. A 1950s glazed-tile coal silo, which stood in the alley-way behind the factory, also has been razed.
### 8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

- [ ] nationally
- [ ] statewide
- [x] locally

**Applicable National Register Criteria**

- [x] A
- [ ] B
- [ ] C
- [ ] D

**Criteria Considerations (Exceptions)**

- [ ] A
- [ ] B
- [ ] C
- [ ] D
- [ ] E
- [ ] F
- [ ] G

**Areas of Significance (enter categories from instructions)**

- Architecture
- Industry

**Period of Significance**

- 1927 - 1941

**Significant Dates**

- 1927
- 1929

**Cultural Affiliation**

- N/A

**Significant Person**

- N/A

**Architect/Builder**

- Fieberstein, Pichard C.

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

[x] See continuation sheet
SUMMARY

Constructed in 1927 and expanded in 1929, the (former) Nebel Knitting Mill is a handsome example of post-World War I vernacular industrial architecture in Charlotte, and the city's most intact hosiery mill. This two-story, brick facility also represents the importance of textile manufacturing in early twentieth-century Charlotte, as well as the growing significance of the full-fashioned hosiery industry. By the 1920s, in response to changing tastes and the post-World War I economic slump, textile manufacturers began to diversify, and increasingly turned to the production of high quality, silk women's stockings. The Nebel Knitting Mill stands as Charlotte's largest and most architecturally impressive factory devoted specifically to the hosiery industry. It was the main mill for the nationally known Nebel Knitting Company, whose founder, William Nebel, is considered a pioneer in the region in the production of silk and synthetic, full-fashioned hosiery. The 1927-1929 plant was designed by noted Charlotte mill architect and engineer, Richard C. Biberstein.
INDUSTRIAL CONTEXT

Completed between 1927 and 1929, the (former) Nebel Knitting Mill is significant as a tangible reminder of Charlotte's hosiery manufacturing, which rose to prominence during the post-World War I period. The Nebel Mill was the first full-fashioned hosiery plant in Charlotte and the first fine-gauge silk hosiery operation in the South (Sieg 1968, 49). The growth of knit-goods manufacturing in the 1920s and early 1930s reflected the diversification of the textile industry, which ventured into new areas of production in efforts to survive the postwar decline in production, as well as to meet the growing demand for women's full-fashioned hose (Hall, et al. 1987, 237-288; Manufacturers Record 1926, 49-50; 1929, 80-81). Until the 1920s, hosiery manufacturing had been limited primarily to men's half hose and the serviceable cotton hose that women wore with longer skirts. The great demand for finer knit silk hosiery that came with the shorter skirts, fashionable in the post-World War years, opened up a new product market for the textile industry. Earlier hosiery mills used the seamless, "circular knit" method of knitting which produced a tube-like stocking closed at the toe with a seam. The full-fashioned knitting method produced a leg-flattering stocking that conformed to the shape of the leg by varying the number of stitches and was closed with a seam up the back of the garment (Hall, et al. 1987, 238; McGregor 1965, 5-7).

Hosiery mills in North Carolina thus grew rapidly in number during the post-World War I decade, while established plants upgraded their equipment to produce high quality silk, seamed hose (Sieg 1968, 56). For example, by 1931, Burlington boasted the greatest number of hosiery mills in the state, with thirty-two, while High Point ranked second, with sixteen plants (Hall, et al. 1987, 255; MacGregor 1965, 7). The status of Charlotte as a textile center and the boom town of the Carolinas in the 1920s made it an attractive location for full-fashioned hosiery mills. The city contained five such mills by the early 1930s, concentrated along the Southern Railroad corridor in Dilworth's industrial section: Larkwood Hosiery Mill; Hudson Silk Hosiery Mill; Charlotte Knitting Mill; Okey Hosiery Mill; and the Nebel Knitting Mill (Charlotte City Directory 1935). The Nebel Mill, which had expanded and relocated to its present site directly north of the Southern Railroad tracks between 1927 and 1929, was the largest and most productive of this group.

The demand for form-fitting hose brought unprecedented income to hosiery employees, whose real earnings rose about thirty-five percent
between 1923 and 1929. Full-fashioned hosiery workers were highly skilled: the knitting of ladies' seamed hose required complicated, specialized machinery, and employees in the full-fashioned hosiery industry were the elite of the textile workforce. Even during the Depression these hosiery workers were in great demand by the expanding industry. In addition to commanding better pay than the great majority of millhands, the knitters and fixers in hosiery mills performed their complex tasks in a safer, cleaner environment. Hosiery mills were not filled with the cotton dust that caused brown lung nor the cotton lint that led to the derogatory nickname "linthead" (Hall, et al. 1987, 255-257; Federal Writers' Project 1939, 176-179).

As employees with comparatively high wages and prestige, Nebel's hosiery operatives did not live in an affiliated mill village. Indeed, none of Charlotte's mills devoted to hosiery that sprang up in the 1920s included villages for workers. The higher wages for the skilled laborers in these plants probably afforded them greater choices in housing and means of transportation (Federal Writers' Project 1939, 176-177). Moreover, with the rise of automobiles, trolleys, and speculative working-class housing in the 1920s, new mill villages, in general, became increasingly rare across the region. Hence, Nebel's employees dwelled in a variety of neighborhoods, commuting to work by automobile or by the trolley, which ran down South Boulevard, near the cluster of hosiery mills there (Nebel Knitting Company Collection).

Even during the Depression, the region's hosiery concerns continued to operate at a steady pace, "forming an oasis of prosperity in the sluggish textile industry" (Hall, et. al. 1987, 255; McGregor 1965, 6-7). The Nebel Mill, indeed, ran steadily throughout the 1930s, and according to William Nebel, his firm never experienced a year with a financial loss (Nebel Knitting Company Collection).
Architectural Context

A handsome expression of post-World War I vernacular industrial architecture in Charlotte, the (former) Nebel Knitting Mill is the most intact of the city's hosiery plants of this period. Of the five such textile operations that arose in the 1920s and early 1930s, the Nebel Mill is, by far, the best surviving example (Charlotte City Directory 1922, 1929, 1935). For instance, the ca. 1925 Charlotte Knitting Company at 104 East Kingston Street has had extensive alterations and additions. Both the ca. 1925 Hudson Silk Hosiery Company building, at the southwest corner of East Kingston and South Boulevard, and the 1932 Larkwood Hosiery Mill at 2500 North Davidson Street have also been been altered and overbuilt (Hanchett 1986). The ornamentation that is still visible on these buildings, such as the Hudson Mill's blond-brick facade and pedimented parapet, reflects a restrained classical treatment that is evident on the Nebel Mill as well.

However, based on such remaining stylistic features, and on the configurations of hosiery factories as shown in the 1929 Sanborn Map of Charlotte, no evidence exists that the city's other postwar mills compared with the Nebel Mill in scale or architectural refinement (Sanborn Map of Charlotte 1929). The Nebel Mill's polychrome wire-brick facade, stone and cast-concrete trim, decorative canopies, and courtyard plan set it apart architecturally from its industrial counterparts of this period, and reflect the prominent role played by the Nebel Knitting Company in the manufacture of full-fashioned hosiery.
Historical Background

The Nebel Knitting Company was established in Charlotte in 1923 by William Nebel (1887-1971), a native of Germany and third-generation hosiery knitter. Nebel emigrated to the United States in 1905, and worked in several textile concerns in New York and New Jersey before moving to Charlotte to launch his own company. A full-fledged knitter since the age of twelve, Nebel was an innovator in hosiery styles, colors, and patterns, and held at least sixteen structural and design patents (Nebel Knitting Company Collection).

The Nebel Knitting Company prospered and expanded its production during the 1920s. From the first operation, with two sets of machinery located on the second floor of a small building on East Kingston Street, Nebel, in 1925, moved to a building at 1822-24 South Boulevard, in the industrial sector of Charlotte's Dilworth neighborhood. This building still stands, though substantially altered and adaptively reused for shops and a restaurant. In 1927, further expansion of the business led to the construction of a new and larger Nebel Knitting Mill, near the middle of the 100 block of West Worthington Avenue. In 1929, this facility was more than doubled in size, creating the main plant that dominates the southwest corner of West Worthington and Camden Road.

William Nebel commissioned Richard C. Biberstein, noted Charlotte architect and engineer, to design both sections of the 1927-1929 mill complex (Nebel Knitting Company Collection). Biberstein (1859-1931) specialized in mill architecture and was reputed to have designed more cotton mills in the Carolina Piedmont than any other individual (Huffman 1984). Biberstein studied mechanical engineering at Worcester (Massachusetts) Polytechnic Institute between 1879 and 1882. He moved to Charlotte in 1887, and worked as a draftsman-engineer for the Charlotte Machine Company before gaining employment with Stuart W. Cramer in 1902. Cramer's engineering firm designed and built many mills in this region, including the 1903 Highland Park No. 3 (National Register 1989). About 1905, Biberstein went into business for himself as a mill engineer and architect with offices in the Piedmont Building on Tryon Street. His career blossomed with the textile industry in this region. Among the mills Biberstein designed were the Lancaster (South Carolina) Cotton Mill, the Boger and Crawford Mill in Lincoln County, the Mooresville Cotton Mills, the Union Cotton Mill in Mount Holly, the Hudson Cotton Mills and the Dixon Mills in Gaston County, and the Larkwood Hosiery Mill in North Charlotte. Biberstein also designed other mills for Nebel, including one in Jacksonville, Florida (Huffman 1984).
When R. C. Biberstein died in 1931, his architecture firm, which still exists under the name Biberstein, Bowles, Meacham and Reed, was taken over by his son, Herman V. Biberstein (1893-1966). It was H. V. Biberstein who designed the final expansion of the Nebel Knitting Mill, an Art Moderne wing completed at a cost of about $150,000 in 1946 (Charlotte News, December 12, 1945). This addition, which is not included in the present nomination, was designed essentially as a separate building, attached to the 1927 portion by a covered passageway for trucks. Subsequently, this truck passage was walled in. As part of the renovation in progress, the roof and walls that joined the two sections of the mill have been removed.

The largest and most productive hosiery concern in Mecklenburg County, the Nebel Knitting Mill, by World War II, employed approximately 350 workers at thirty-eight machines for producing nylon full-fashioned stockings. During the 1940s, the company began an aggressive national advertising campaign, including layouts in fashion magazines such as Vogue and Seventeen. The company also followed the lead of other large textile concerns of the Carolinas and maintained an office in the Empire State Building. A 1953 newspaper article on the Nebel Mill stated that the factory's production ranked it "among the largest hosiery mills in the Southeast." The article proclaimed that "Nebel and nylon are two words often spoken by the nation's retail merchants" (The Charlotte News, November 14, 1953). By 1968, the Nebel company employed almost 600 operatives and produced approximately two million dozen pairs of hosiery annually (Knitting Industry 1968).

The Nebel Knitting Mill remained in operation until 1968, when it was acquired by Chadbourn, Inc., a Charlotte-based hosiery and apparel manufacturer. The building was last used by the Mecklenburg Manufacturing Company, producers of children's knitware, which had acquired the mill in 1978 (Van Hecke 1989). This firm closed its doors in 1989. The property is currently owned by Old Spaghetti Warehouse, Inc. of Garland, Texas, which has renovated the 1929 portion of the building for use as a restaurant. The 1927 section is currently being renovated as professional office suites, and two offices on the first floor are completed and occupied. The 1946 building stands vacant, and plans for this building are currently undecided.
Previous documentation on file (NPS):
☑ preliminary determination of individual listing (36 CFR 67)
☑ previously listed in the National Register
☑ previously determined eligible by the National Register
☑ designated a National Historic Landmark
☑ recorded by Historic American Buildings
☑ recorded by Historic American Engineering

Survey # ___________________
Record # ___________________

10. Geographical Data

Acreage of property: Approx. .9 acre

UTM References
A 17 5 12 7 0 9 3 89 6 3 00
Zone Easting Northing
B ___________________
D ___________________

Verbal Boundary Description
The nominated area is delineated on the accompanying Mecklenburg County tax map, Book 121, page 02.

Boundary Justification
The boundary of the Former) Nebel Knitting Mill encompasses the 1927-1929 mill and subsidiary buildings and structures located within this mill complex. The boundary does not include the 1946 facility added directly to the north of the 1927-1929 plant.

Primary location of additional data:
☑ State historic preservation office
☑ Other State agency
☑ Federal agency
☑ Local government
☑ University
☑ Other

Specify repository:
University of North Carolina-Chapel Hill, Special Collections

See continuation sheet

11. Form Prepared By
name/title Suzanne S. Pickens/Richard L. Mattson
organization Historic Preservation Services
street & number 309 E. Park Ave. #3
city or town Charlotte
date 9-20-90
telephone 704-332-6309
state N.C. zip code 28203
BIBLIOGRAPHY

Biberstein Collection. Architectural plans, building specifications, correspondence relating to the Biberstein's firm's work for William Nebel. The Collection is available at the University of North Carolina-Charlotte, Special Collections, Charlotte, N.C.


Manufacturers Record. 1926, 1929.


Nebel Knitting Company Collection. Memos, newspaper clippings pertaining to the Nebel Knitting Company in Charlotte. The Collection is available at the University of North Carolina-Charlotte, Special Collections, Charlotte, N.C.

IDENTIFICATION OF PHOTOGRAPHS

(Former) Nebel Knitting Mill
101 West Worthington Avenue
Charlotte, North Carolina
Mecklenburg County
Photographers: Richard Mattson and Suzanne Pickens
5-10-91
N.C. Division of Archives and History
Raleigh, N.C.

1. North and east elevations, looking northwest

2. Southeast corner of 1929 portion of mill, looking northwest

3. Entrance, 1929 portion of mill, north elevation, looking southwest

4. Entrance, 1927 portion of mill, north elevation, looking southwest

5. South (rear) elevation, looking north

6. Courtyard, looking northwest

7. Interior, dining room in 1929 portion of mill, looking east

8. Interior, office suite in 1927 portion of mill, looking west