United States Department of the Interior
Heritage Conservation and Recreation Service

National Register of Historic Places Inventory—Nomination Form

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic New York Belting and Packing Co.

and/or common Fabric Fire Hose Co.

2. Location

street & number 45-71, 79-89 Glen Road N/A not for publication

city, town Newtown N/A vicinity of congressional district 6th

state Connecticut code 09 county Fairfield code 001

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	___ occupied	___ agriculture	___ museum
X building(s)	X private	X unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	___ yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
	N/A	x no	___ military	X other: vacant

4. Owner of Property

name Newtown Mill Associates Limited Partnership

street & number c/o F.W. Doepke, 1 East Putnam Avenue

city, town Greenwich N/A vicinity of state CT 06830

5. Location of Legal Description

courthouse, registry of deeds, etc. Newtown Land Records, Edmond Town Hall

street & number 45 Main Street

city, town Newtown state Connecticut

6. Representation in Existing Surveys

title See continuation sheet has this property been determined elegible? ___ yes X no

date " " " ___ federal X state ___ county ___ local

depository for survey records "

city, town " state "

7. Description

Condition		Check one	Check one
___ excellent	___ deteriorated	___ unaltered	X original site
X good	___ ruins	X altered	___ moved date _____
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

Overview

The New York Belting and Packing Company factory is a mid-19th-century, Italianate, four-story, brick building of 70,000 square feet. It is located in a ravine on the Pootatuck River one mile north of the main intersection of the Sandy Hook section of Newtown, Connecticut. The 12.8 acre site includes a dam, a large mill pond, and a hydroelectric plant.

Rocky Glen State Park lies across the river from the factory. The heavily wooded park slopes sharply down to the river's edge, to form the ravine. Up river to the south there is another dam and factory. Glen Road, running parallel to the river, forms the eastern edge of the site. Modest frame houses are well spaced from one another along the eastern side of the road. To the north of the site the Pootatuck flows into the Housatonic River.

Exterior

The Pootatuck River rises in the town of Monroe, Connecticut, and flows north through Sandy Hook. There is sufficient drop before reaching the Housatonic River to permit construction of several dams, mill ponds, and factories. As the New York Belting and Packing Co. is the last of these sites, it enjoyed the ponding capacity of its up-stream neighbors in periods of low water.

Much of the New York Belting and Packing Co. site is occupied by the pond, which is 2300 feet long. The pond is formed by a concrete buttress dam, 25 feet high, that was built c. 1910 by Fred T. Ley & Co., contractors, of Springfield, Massachusetts. (Photograph 1.) An earlier wooden dam is still in place under the present water level. Below the dam there is a flat piece of land, opposite the steep, west bank of the park, that forms a fine site for the factory.

The principal 60 x 196-foot building of the factory has an east-west orientation with a tower on the south elevation. A canal leads from the mill pond on the south to the hydroelectric plant at the east end of the factory.[1] Additions have been built at the west end of the main structure, and there are two outbuildings remaining on the site. (See Sketch Map.)

A drive curves in from Glen Road in a northwesterly direction over the canal and down to the factory. (Photograph 2.) The one-story building on the left (Building 13 on the Sketch Map) probably pre-dates the factory building. It is 20 x 36 feet, constructed of brick with a gable roof, and has an iron door and iron shutters on its east elevation. At the gable ends the eaves return, forming a Greek Revival style effect with a dentil course of brick.[2] Two other wooden outbuildings in the mill yard have been demolished recently because they were superfluous to the proposed adaptive re-use of the factory building as offices.

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New York Belting and Packing Co., Newtown, CT

State Register of Historic Places
1982 State
Connecticut Historical Commission
Hartford Connecticut

Historic American Engineering Record,
Connecticut, an Inventory of Historic Engineering and Industrial Sites
1981 State
Connecticut Historical Commission
Hartford Connecticut

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New York Belting and Packing Co.

The architectural style of the building is set by a 19-foot-square Italianate tower that rises two stories above the main structure on the south elevation. The top stage of the tower, under a low pyramidal roof, has two round-arched blind recesses in each face. Each recess has a tall, narrow, round-arched aperture. Several of the apertures are glazed and several are bricked in, apparently never having been glazed. The recesses are supported by a string course over a central oculus window, on each face, and rise to the bracketed overhang of the low, pyramidal roof. (Photograph 3). The front door is at the bottom of the tower. It is protected by a shed roof supported by diagonal brackets with drops. (Photograph 4.).

The section of the main building to the right of the tower has 12 bays. The windows are 8-over-8 at the first and fourth floors and 12-over-8 at the third. Apertures have segmentally-arched lintels of two rows of vertical headers plus one row of horizontal headers. The sills are made of one row of flat headers. At the second floor new sash of three horizontal sections were installed about 20 years ago as part of a conversion of this section of the building to office space. In each wall space between the windows there is a star washer marking the termination of a short, interior tie rod that is bedded in a beam.

To the left of the tower there is an 18 x 30-foot, three-story addition that served as the office of the factory. To its left is a further 32 x 54-foot, four-story addition. These additions probably were built about 1870.[3] Their fenestration, different from that of the main building, consists of paired 9-over-6 windows alternating with a single 12-over-8 window in the first, third and fourth floors, while the second (main) floor has paired 6-over-6 windows alternating with a single 12-over-12 window. The front corner of the office section, near the entrance platform, and the southwest corner of the larger addition are rounded, with inverted conical corbeling at the top of the rounded sections. (Photograph 4.) A further two-story addition runs across the west end of the building, and the boiler house is at the northwest corner. The boiler house is a high one-story structure, 48 x 60 feet, with a monitor roof. Its two large doorways have big, half-round fanlights. (Photograph 5.) The metal stack is an early 20th-century replacement for a brick stack.

The hydroelectric plant, which is supplied by a large metal pipe from the canal, is housed in a 33 x 56-foot, three-story building at the east end of the factory. Its windows are 12-over-8, and it has a plain, low, gable roof. The southeast corner of this building is rounded with the inverted conical corbeling, indicating that it may have been built at the same time as the office and adjoining addition on the south elevation.

The north elevation presents the full 24 bays of windows, 8-over-8 on the first and fourth floors, 12-over-12 on the second and 12-over-8 on the third floor. On this elevation, grade is lower and the full four stories of the factory are above grade. (Photograph 5.)

The main building has a low gable roof with two square, wooden belvederes that complement the picturesque composition of the Italianate tower. The belvederes have a 12-over-8 window in each face under a projecting, bracketed, flat-roof overhang. The main roof surface is built up with roofing paper and covered with a coat of aluminum colored paint.

Interior

The basic structural system of the factory is exterior brick bearing walls laid up in common bond and interior post-and-beam construction with thick floors and no joists, known as the "slow-burning" system. Each wooden member is thick and heavy, so that it would tend to char rather than flame in a fire. The scheme, effective in reducing fire losses, was an important 19th-century advance in mill construction technique.

There are two rows of posts across the width of the main building, 20 feet from the walls and from each other. They are positioned opposite the wall spaces between the windows. As there are 24 windows, there are 24 posts in each row, for a total of 48 posts on each of the first, second and third floors. On the first floor the posts are heavy cast iron with brackets near the ceiling that carried the line shafts for power transmission. On the second floor most of the posts are iron, but smaller in diameter, and thought to be replacements for original wooden posts. There are a few round, wooden posts, thought to be the originals, and some chamfered, square, wooden posts thought to be replacements for the round wooden posts, and themselves replaced by the iron posts.[4] (Photograph 6.) The third floor has all iron posts. The posts support heavy wooden beams that are one continuous piece, 60 feet long. The floors are made up of several layers of two-inch-thick planks.

The roof is supported by wooden trusses (Photograph 7), bearing on the exterior walls. The tendency of this force to push the walls apart is balanced by the many horizontal tie rods in the building. Vertical rods from the trusses support the ceiling of the fourth floor. Consequently, this floor has no posts, and is an open area of 60 x 196 feet, in marked contrast to the forest of posts on the other three floors. (Photograph 8.)

The hydroelectric plant, installed at the time of World War I, was used until 1962. The present single-runner S. Morgan Smith turbine and Crocker-Wheeler alternator date from c. 1936, were re-built in 1960 and were used to 1962. It is now planned to reactivate the hydroelectric plant.

The end of a line shaft remains in place below the hydroelectric plant. (Photograph 9.) This shaft was driven by the turbine said to be still in place below it that replaced the original water wheel. Belting and pulleys conveyed the power to jack shafts and to machines throughout the factory. When the water level was low, a steam engine at the other end of the plant, near the boiler house, was started up to drive the line shafts. This system of power generation and distribution was discontinued in favor of electric power.

The office at the left of the entrance platform is the only room with finish. It has a wooden dado and the ceiling is made of narrow beaded boards.

Operations of the Fabric Fire Hose Co. ceased on December 2, 1977. The looms and other critical machinery were sold and moved to a location in North Carolina. Other machinery and supplies were disposed of. The factory is now empty and vacant. Work has started on rehabilitation of the structure for use as offices.

1. A tail race to convey the water back to the river runs under the factory.

2. Local residents refer to Building 13 as the old slaughterhouse, although whether it served such a function before or during the life of the factory is not clear.

3. An 1859 picture shows the building without the additions, but they appear in an 1881 picture.

4. Munson. (There is no documentary of other hard information concerning the posts.)

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	X archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	X architecture	___ education	___ military	___ social/ humanitarian	
___ 1700–1799	___ art	___ engineering	___ music		
X 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ theater	
___ 1900–	___ communications	X industry	___ politics/government	___ transportation	
		___ invention		___ other (specify)	

Specific dates 1856, c. 1870 **Builder/Architect** Unknown

Statement of Significance (in one paragraph)

Criteria

The New York Belting and Packing Co. factory is a fine example of mid-19th-century mill construction in the Italianate style. The building has experienced few changes and therefore has outstanding integrity. (Criterion C.) The dam and hydroelectric plant, still in place, and the history of machinery development that was at the heart of the manufacturing processes, are valuable to the study of machinery and power plant development. (Criterion D.)

History

The Goodyear Rubber Packing Co., headed by Josiah Tomlinson, brother-in-law of Charles Goodyear,[1] began operations on the Pootatuck River site c. 1850, but went bankrupt in 1856.[2] The New York Belting and Packing Co. bought the premises in that year.[3] The property consisted of two adjacent parcels, each with factory building, dam, engines, machinery and rights of flowing and ponding the water. One of these parcels included the dam and factory above the nominated site, referred to as the upper mill. The other parcel of 12.8 acres, the lower mill, is the nominated site. A fire destroyed the lower mill the same year, 1856. A new structure, which is the present factory building, was promptly constructed on the site.[4] The New York Belting and Packing Co. made power transmission belts, packing for steam joints and fire hoses fabricated from laminated rubber and cotton duck.

The Fabric Fire Hose Co. occupied the premises in 1901 as a tenant of New York Belting and Packing Co. and continued operations until 1977. The factory has been known as the Fabric Fire Hose Co. throughout the 20th century, a far longer span of years than it was known as New York Belting and Packing Co.

Fabric Fire Hose Co. began operations in Warwick, New York, in 1869. It moved to Newtown in 1901 under the management of William T. Cole (b. 1861). In February 1917 New York Belting and Packing Co., having moved to Passaic, New Jersey, sold the two parcels with the two factories and water rights to Rubber Goods Manufacturing Co. of Jersey City, New Jersey,[5] who, on May 25 of the same year, re-sold the properties to the United States Rubber Co., later known as Uniroyal.[6]

According to William T. Cole, New York Belting and Packing Co. was a subsidiary of United States Rubber Co. and Fabric Fire Hose Co. an affiliate.[7] The identity of Rubber Goods Manufacturing Co. is unknown.

9. Major Bibliographical References

See continuation sheet.

10. Geographical Data

Acreage of nominated property 12.8

Quadrangle name Newtown **Quadrangle scale** 1:24000

UMT References See continuation sheet.

	Zone	Easting	Northing
A			
B			
C			
D			
E			
F			
G			
H			

Verbal boundary description and justification The nominated property is described as first parcel in Newtown Land Records (NLR), vol. 289, pp. 411-417. The parcel includes the factory and mill pond and has been essentially unchanged since mid-19th century. See NLR 62/470.

List all states and counties for properties overlapping state or county boundaries

state	N/A	code N/A	county N/A	code N/A
state	N/A	code N/A	county N/A	code N/A

11. Form Prepared By

name/title	David F. Ransom, Consultant
organization	Connecticut Historical Comm.
date	September 9, 1981
street & number	59 South Prospect Street
telephone	203 566-3005
city or town	Hartford
state	Connecticut

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national ___x___ state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the Heritage Conservation and Recreation Service.

State Historic Preservation Officer signature

title Director, Connecticut Historical Commission date April 20, 1982

For HCRS use only

I hereby certify that this property is included in the National Register

William H. Brennan date 6.2.82

Keeper of the National Register

Attest: Patrick Andrus date 6/1/82

for Chief of Registration

GPO 938 835

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It does seem clear, however, that United States Rubber Co. (Uniroyal) was the dominant party of interest in the ownership of the property from 1856 until sale to the present owner in 1980. Fabric Fire Hose Co. operated as a tenant with separate identity until 1962 and then was a subsidiary of Uniroyal, with William F. Cole as manager, until operations were discontinued in 1977.

Architecture

The four-story, rectangular brick factory structure is characteristic of its period in several ways, beginning with the question of location. The location was determined by the availability of water power; the factory necessarily was constructed on a site where a dam and water wheel could provide the required power. The shape and multi-story nature of the building were determined by contemporary considerations of cost effectiveness in creating manufacturing floor space. The elongated rectangle was the optimum form for power distribution by drive shaft and belting.

The construction technique of exterior, masonry, load-bearing walls combined with interior heavy post-and-beam framework and thick plank floors but no joists was designed to reduce the fire hazard. The wooden members all were heavy enough so that they would tend to char rather than flame during a fire. This technique was effective in reducing fire losses during the 19th century and was a major advance in mill construction methods. Millions of square feet of this so-called "slow-burning" construction were built during the 19th century in New England. During the 20th century there have been changes in the uses to which such buildings have been put, if they have survived, and the buildings have been altered accordingly. At the New York Belting and Packing Co. the function of the building continued without change from 1856 to 1977, and the physical condtiion of the structure reflects the lack of change in function. Accordingly, the building provides an unusual opportunity to study 19th-century New England mill construction.

The building provides a useful record of 19th-century posts and tie rods, including the heavy cast-iron posts with brackets for the line shafts on the first floor, the round and chamfered wooden posts on the second floor, and the round iron posts of the second and third floors. Vertical tie rods supported by the roof trusses eliminate the need for any posts on the fourth floor, while many short, horizontal tie rods used with exterior star washers bind the exterior walls and heavy floor timbers into a single structural system.

As was usually the case in 19th-century mill buildings, architectural style found its most specific expression in the stair tower. The pre-Civil War popularity of the Italianate style is expressed at the New York Belting and Packing Co. by the low pyramidal roof with overhang, paired tall round-headed apertures and bull's eye windows. The two wooden belvideres in the principal gabled roof carry out this theme.

Power Plant and Machinery

The concrete buttress dam, open raceway or canal and hydroelectric plant are present and are intact in their relationship to one another. The fact that it is planned now to make them operational again is a sign of the times, indicative of New England's critical energy supply problem at this time. The presence of the old wooden dam beneath the surface of the mill pond and the 19th-century turbine provide an opportunity to study the sequence of the power plant development: a water wheel to turn the line shaft, a turbine to turn the line shaft, a turbine to power an electric generator, and the existing improved turbine and electric generator.

When New York Belting and Packing Co. took over in 1856 from the Goodyear firm, it developed the basic Goodyear discoveries through introduction of improved machinery. The new machinery included circular knives to cut the masses of natural rubber into slabs, grooved iron cylinders to break up the slabs into smaller pieces, and grinding and kneading devices to bring the rubber mass to a condition where it could be heated (vulcanized) and calendered into homogeneous material suitable for further processing.[8] New York Belting and Packing Co. manufactured three principal products from the prepared rubber. They were power transmission belts, packing for steam joints, and fire hose. The belts and hose required laminating the rubber to cotton duck fabrics. The fire hose was fabricated by wrapping layers of rubber and rubber-impregnated duck around a metal form (iron pipe) under heat and pressure to create the tubular hose.

The Fabric Fire Hose Co. introduced an alternate method of forming the tubular fire hose by weaving a fabric hose on circular looms and then inserting a rubber liner. Even as New York Belting and Packing Co. improved on the Goodyear methods, Fabric Fire Hose Co. made advances in the weaving methods. In the 1950s Charles S. Cole, then president of Fabric Fire Hose Co., invented and patented an improved loom that produced a superior product at higher speeds. Parts for the improved looms were made at various nearby machine shops and assembled at Fabric Fire Hose Co.[9] In recent years 17 of these looms were in operation, and were located in the addition to the left of the office. Warp threads for the looms were supplied by creels located on the floor below the looms. Each creel provided 389 threads that were drawn up through the floor to each loom where a rotary shuttle added the filling threads to weave the tubular hose. Various fibers and various numbers of filling threads per inch were used to weave a range of descriptions of fire hose with 1½", 3", 4", 5" and 6" interior diameters in 50- and 100-foot lengths.

A rubber liner was then fitted into the woven tubular jackets. This work was done on the fourth floor where the absence of posts facilitated handling the 50- and 100-foot lengths. A steel rod was inserted through the length of the hose and then pulled back in such fashion as to bring the lining into place. In recent years the rubber lining was extruded on the premises, the extrusion process itself being one that never was thought of in the days of the New York Belting and Packing Co.

In the 1970s the Fabric Fire Hose Co. production force consisted of 39 people on the first shift, 20 on the second, and 10 on the third shift. With office workers the total number of people employed approached 100. The company ranked second or third in volume of production of fire hose among five major producers in the country.

1. Charles Goodyear discovered vulcanization in Newtown in 1839.

2. Roth, p. 16.

3. Newtown Land Records (NLR) 40/671, 672, June 2, 1856.

4. Johnson, p. 248.

5. NLR 62/470, February 1, 1917.

6. NLR 62/572-578, May 25, 1917.

7. Johnson, p. 249.

8. Scientific American

9. The last six looms were made in England and shipped to the factory as finished machines.

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Fabric Fire Hose Co.
Continuation sheet Bibliography Item number 9 Page 1

Cole, William T., interview, September 15, 1981. William T. Cole was manager of the plant at the time it closed.

Hurd, D. Hamilton, comp., History of Fairfield County, Philadelphia: J. W. Lewis & Co., 1881.

Johnson, Jane Eliza, Newtown's History and Historian, Ezra Levan Johnson, Newtown: 1917.

Munson, Kenneth, interview, September 3, 1981. Munson was foreman of the lining room during the last 20 years of Fabric Fire Hose Co. operations and is now Building Manager.

Newtown Land Records.

Roth, Matthew, Connecticut, an Inventory of Historic Engineering and Industrial Sites, Washington: Society for Industrial Archeology, 1981.

Wilson, Lynn Winfield. History of Fairfield County, Connecticut, Chicago: S. J. Clark Publishing Co., 1929. V. 3.

Scientific American, vol. 1, new series, no. 1 (September 10, 1859), pp. 169-176.

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UTM References

UMT References
A 18/644110/4588180
B 18/644080/4588160
C 18/644060/4588150
D 18/644070/4588120
E 18/644090/4588110
F 18/644040/4587910
G 18/643900/4587780
H 18/643760/4587660
I 18/643600/4587400
J 18/643580/4587420
K 18/643580/4587480
L 18/643630/4587520
M 18/643630/4587600
N 18/643940/4587920
O 18/643970/4588180
P 18/644070/4588200

Fabric Fire Hose Co.
Newtown, CT

Sketch Map

Photo Key

Scale: 1" = 40'

Rocky Glen State Park