Harmony Manufacturing Company
Mill No. 3, (Mastodon Mill)
100 North Mohawk Street
Cohoes, Albany County,
New York

HAER No. NY-5

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Office of Archeology and Historic Preservation
National Park Service
U.S. Department of the Interior
Washington, D.C. 20240

HISTORIC AMERICAN ENGINEERING RECORD

HARMONY MANUFACTURING COMPANY, MILL No. 3 (MASTODON MILL) HAER No. NY-35

Location: 100 North Mohawk Street
Cohoes, Albany County, New York
Latitude: 42° 46' 0" N. Longitude: 73° 42' 30" W.

Dates of Erection: North section: 1866-1868
South and central sections: 1871-1872

Architect: D. H. Van Auken, C.E.

Present Owner: CCCS Corporation

Present Occupant: Cohoes Industrial Terminal Corporation

Present Use: Various manufacturing purposes by ten companies

Significance: Known locally as the Mastodon Mill, the Harmony Mill No. 3 is exceptionally interesting for its decorative architectural treatment, uncommonly elaborate for an industrial structure. Although the building is nearly 1100 feet long, its finely articulated facade, mansard roof, and central tower make it a well-scaled element of the Harmony Mills complex, which includes mill buildings, power canals, workers' houses, and commercial structures. Harmony is one of the finest examples of a large-scale textile mill complex outside of New England, and it has played an important role in the economic development of Cohoes.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Dates of construction: Ground was broken for the north section in late May or early June 1866. The first machinery was run in the factory on 1 January 1868. Cotton was taken into the pickers on 1 February 1868.

2. Architect: A Cohoes architect and civil engineer, Van Auken was also the engineer for the Cohoes Company, which supplied water for power to various Cohoes mills, including those of the Harmony Manufacturing Company.

3. Original and subsequent owners: One history of the Harmony Mills states that the Cohoes Company held title to the lands on which the Harmony Mills were located until 1915 (Clark, p. 43). However, records in the office of the Recorder of Albany County indicate that the transfer must have taken place at an earlier date:

1911	13 March 1911 Liber 301	20 March 1911 Page 52
	Harmony Mills (N. Y.) to Harmony Mills (Mass.)	
1937	31 August 1937 Liber 887	2 September 1937 Page 410
	Harmony Properties Inc. to Industrial Properties Inc.	
1938	29 June 1938 Liber 901	30 July 1938 Page 105
	Industrial Properties Inc. to Day Court Builders Inc.	
1967	30 June 1967 Liber 1910	6 July 1967 Page 219
	Day Court Builders Inc. to Cohoes Assocs. Ltd.	
1967	30 June 1967 Liber 1910	6 July 1967 Page 233
	Cohoes Assocs. Ltd. to CCCS Corporation	

4. Builder: John Land had the contract for carpentry and joiner work, a large job in that two million feet of lumber were used. In order to proceed with his work, it was reported, that:

> Mr. Land is now building a large shop, 150 by 40 feet, in which he designs to put a steam engine, to run planes and saws, which will greatly facilitate the work. (Cohoes Cataract, 16 June 1866).

5. Original purpose and construction: In excavating for the foundation of the north end of the building, the bones of a mastodon were found. Subsequently the mill became popularly known as the "Mastodon Mill." The skeleton of this mammoth was presented to the State of New York, and it still remains on display at the State Museum in Albany.

An 1868 article in the Cohoes Cataract described the mill and its construction:

> The main building is 565 feet long, 77 feet wide, and five stories high, with a fireproof wing of the same height 100 feet long and 50 feet wide, in which the pickers are placed.
>
> To prepare the foundation and wheel pits, there were removed 40,000 [cubic] yards of earth and rock.
>
> In the erection of the building the following material was used: 1,000,000 yards of stone, 3,000,000 brick, 4,500 yards of sand, 30,000 bushels of lime, 1,000,000 lbs. cast and wrought iron, 800,000 ft. hemlock planks, 500,000 ft. pine timber, 450,000 ft. southern pine flooring, 400,000 ft. pine ceiling, and 1,000 kegs of nails.
>
> The motive power, equal to 1,200 horse power, is furnished by the Boyden Turbine wheels made by the Ames Manufacturing Co., of Chickopee [sic], Mass. They are all geared to one shaft ten inches in diameter, on which are six pulleys, each 12 feet in diameter, and 26 inch face.
>
> These wheels and shafts connected, have 100 tons cast iron, 70 tons wrought iron, and 3 1/2 tons brass and bronze, and are all made and fitted with all the care and accuracy of fine machinery. They drive over two miles of shafting and 1,400 pullies, besides those connected with the machines.
>
> There are six main belts driving from the water wheel shaft, one to each room. These belts are of double leather 24 inches wide, and their united length is 950 feet; there are also over 10 miles of other belting of various widths.
>
> The mill is warmed by over five miles of small pipe supplied with steam generated by three boilers situated some distance south of the mill.
>
> It is lighted by 1,000 gas lights supplied by four miles of gas pipe. The machinery is all of the most approved kinds, which could be found in England and America, and includes 70,000

yarn spindles, and 1,500 fast looms. When all running, it will produce 60,000 yards of cloth per day.

The mill at that time was the largest in Cohoes and one of the largest in the United States. A report of 1873 described the operations in each section of the mill:

> The first floor of this portion of the Mill is occupied in part by the wheel-pit as aforesaid, the remainder is devoted to repairing machinery, and cleaning, folding, and baling the printing cloths, produced by these mills. The cloth is baled by means of machines, similar in operation to a hay press. The contents of each bale measured 1,800 yards.
>
> West of this section of the building, and communicating therewith, is another large building, built of stone, and brick, and iron, and perfectly fire-proof, constituting
>
> THE PICKER ROOM
>
> This building is filled with costly and heavy machinery of brass, and steel, and iron, for opening, picking, and preparing the raw cotton for the different operations necessary to change it into elegant fabrics suitable for 'the trade.'
> . . . . . .
>
> THE WEAVE ROOM
>
> is on the second floor. The noise of this vast appartment, 70x600, with its 1,000 looms and 300 operatives, is perfectly deafening. And the effect upon a person unaccustomed to the scene is something like that experienced when standing on the brink of Niagara, or near a ponderous and mighty moving railway train. The whole number of looms in the entire Mill is 2,700. A remarkable feature here, is the absence of all visible shafting--the intricate machinery receiving motion from the shafting on the floor below. The weavers, nearly all of whom are females, tend from three to five looms each, according to experience and ability. The walls of the room at their line of junction with the ceiling are decorated with a plain gold border,

and the air of neatness and taste which pervades the entire establishment, would do credit to any well appointed parlor.

THE CARD ROOM

is directly above the Weave Room, and also extends the entire length and width of this section of the building, and is occupied by ingenious and complicated carding machines and their accessory contrivances, employing in their proper management, hundreds of men, women, and boys and girls.

THE MULE ROOM

This apartment is occupied by sixty self-operating mules, each sixty-five feet long. Each operative tends two mules. These self-acting machines, with their thousands upon thousands of rapidly revolving spindles, drawing out, twisting and winding up myriads of delicate threads with infallible precision and unerring certainty, with no hand to direct or control their operations, present to the beholder a most convincing exemplification of what the wonderful mind is able to contrive and accomplish.

THE SPOOLING AND WARPING ROOM

is in the fifth story. The operatives here are mostly boys and girls. One set of hands are busily engaged winding the thread from the 'cop' as it comes from the Mule Room, upon spools, by means of a winding apparatus. Others are making the 'warp,' which process combines operations of sizing, drying, &c. The machinery of this room, although less intricate than the 'mule' of carding machine, is a very admirable and effective combination of mechanism. Throughout the entire extent of this spacious apartment, not a single supporting column obstructs the view, as the self-sustaining properties of the French roof, which forms the sides and ceiling of the room, render such appliances unnecessary.
(Bean, pp. 21-24)

6. Additions: In 1871 an addition to the mill was begun. This addition was part of the original total scheme for Mill No. 3. The second section was to be constructed to the south after the first part was in operation. This addition, which was completed in 1872, was 76 feet wide

and 510 feet long. The operations of this section of the mill were described thus in 1873:

> The basement, which is fire-proof, contains the wheel-pit and a large room adjacent, which is used for opening, picking, and lapping cotton. This room contains 3 openers and lappers, 3 finishing lappers and 96 40-inch carding engines, from which a lap is made for the finishing cards, passing thence by an elevator to the third story, in which are 96 finishing cards, 16 railway heads, 16 drawing frames, and 96 slubbing and roving frames, from which the roving is carried to the mule spinning room in the fourth floor, where are 60 self-operating mules, each sixty-five feet long; the yarn is carried thence to the fifth story, which contains the frame, spinning, spooling, and warping machines; there the yarn is carried to the sizing room on the first floor and prepared for the weave rooms, which occupy the balance of the first and the whole of the second floor. The cloth is then carried to the central tower, where it is examined, measured, baled, and shipped for market. It is the intention of the company to make wide and fine Muslin in this portion of the Mill, in imitation of the best French Dress Goods. This section of the Mill contains 60,000 spindles, 1,100 looms, and produces 300,000 yards of cloth per week. The whole Mill contains 130,000 spindles and 2,700 looms, and produces 700,000 yards per week. (Bean, p. 24).

B. Historical events and persons connected with the building:

The Harmony Manufacturing Company, later known as the Harmony Mills, was incorporated in 1836. Various prominent business men were among the founders of the company, including Peter Harmony, after whom the company was named.

In 1837 the first mill for cotton spinning was erected on a plot of land which became the nucleus of the holdings of the company. This operation was not, however, a financial success, and in 1850, the property was sold to Garner & Co., of New York, and to Alfred Wild, of Kinderhook. Garner & Co. operated mills in Rochester, Newburg, Wappinger Falls, and Rockland, New York, and in Reading, Pennsylvania. Thomas Garner also held a controlling interest in the Cohoes Company. A bronze statue of Garner by Millman, a Boston sculptor, was placed

after Garner's death in a niche in the central tower of the mill, where it still stands.

Robert Johnston, who had previously managed a cotton mill for Nathan Wild in Valatie, New York, was appointed by Wild's son, Alfred, agent of the Harmony Mills. Johnston, and his son David J. Johnston, so successfully managed the mills that in 1873 the Harmony complex was described as "the richest, the largest, and the most complete Cotton Manufacturing Establishment on the American continent." (Bean, p. 16)

The Harmony Mills took a great interest in the well-being of its employees and their surroundings. The company built tenements for its workers. The streets, which were lined with shade trees, reputedly were kept very clean; the sidewalks were paved with asphalt; and a Sunday school and afternoon worship services were sponsored by the company.

The company's very influential role in the development of Cohoes was acknowledged by a contemporary writer:

> The existence of a manufacturing concern of such magnitude has of course been of the utmost benefit to Cohoes in a business point of view, and contributed largely to its prosperity. Through its means large accessions have been made to the population, and the constant expenditures made by the corporation in wages, in the erection of buildings and in various improvements have been of marked advantage to the commercial interests of the place. (Masten, p. 241)

After Robert Johnston died in 1890 and David J. Johnston in 1894, D. S. Johnston became in 1903 the third generation of his family to hold the position of agent of the company. In 1910 Garner & Co. sold its interest in the Harmony property and in the Cohoes Company as well. The mills were purchased by the Saco-Lowell and Draper Corporation of Hopedale, Massachusetts, major manufacturers of textile machinery. The Harmony Mills Corporation was liquidated between 1932 and 1937, and the real estate properties were sold. The No. 3 Mill was sold along with some other buildings for $2,500.

C. C. Sources of Information:

1. Old views:

Plans, elevations, and wheel pit details are found in Evan Leigh's The Science of Modern Cotton Spinning, 2nd ed. Manchester, England: Palmer and Howe, 1873.

Collection of the Cultural and Historical Society of Cohoes. Material unavailable at time of writing.

2. Unpublished sources:

Clark, Edward J. "Economic History of the Harmony Mills of Cohoes, New York." Master's Thesis, Graduate School, Siena College, 1952.

Telephone conversations with Mr. William Magee, Manager, Cohoes Industrial Terminal Corporation and with his secretary.

3. Published sources:

Adams, Elmer L. History of the Harmony Mill, Cohoes, N.Y. (Typewritten, copy at the Troy Public Library).

Bean, William. The City of Cohoes, Its Past and Present History, and Future Prospects. Its Great Manufactories. Cohoes: The Cataract Book and Job Printing Office, 1873.

The Cohoes Cataract. 1866, 1868

Howell, George R., and Tenney, Jonathan, eds. History of the County of Albany, N. Y., from 1609 to 1886. New York: W. W. Munsell & Co., 1886.

Leigh, Evan. The Science of Modern Cotton Spinning. 2nd ed. Manchester: Palmer & Howe, 1873.

Masten, Arthur H. The History of Cohoes, New York, from Its Earliest Settlement to the Present Time. Albany: Joel Munsell, 1877.

Prepared by Diana S. Waite
Architectural Historian
September 1969

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The Mastodon Mill is an unusually elaborate example of Victorian textile mill construction. The two principal blocks on the north and south, built several years apart, are similar and coaxial. Each is of five stories including the usable Mansard attic, plus full, usable basement. At the approximate third-points, projecting from the principal (west) face of each section, are two six-story stair towers originally surmounted by convexo-Mansard roof caps, since removed. Projecting to the rear of the early (north section) and at right angles to it is

a five-story wing originally for the picking and opening machinery.*

When the south section was built, it was joined to the original section by a large central pavilion, projecting slightly beyond the front and rear faces of the main blocks, with a high Mansard roof rising one story above the main roofs. At each corner of the pavilion is a highly detailed square tower capped by a straight Mansard roof crowned with decorative ironwork. A niche at the fifth story level contains a heroic full-length bronze statue of Samuel Garner, marked on its base "GARNER."

2. Condition of fabric: Average to good.

B. Description of Exterior:

1. Overall dimensions: Aproximately 1100 feet by 75 feet. North section 56 bays long; south 51 bays; both three bays wide divided by two rows of cast-iron columns.

2. Foundation: cut and random-ashlar granite.

3. The bearing walls are of standard red brick in running bond. Quoins, window heads and sills variously of sandstone and cast iron. Most of the molding and detail of the central pavilion is galvanized iron.

4. Structural system: Standard slow-burning mill construction of heavy timber lateral beams supporting structural floor planks; cast-iron columns at the beam third points.

5. Openings: All frames, doors and sash, wood; all sash double-hung, 12-over-12. All openings segmentally arched except dormers and doorways which are full-arched.

6. Roofs: Mansard faces: slate; pitched portions: built up. Form described above. Galvanized cornice and eaves.

C. Description of Interior:

1. Floor plan: Five floors of large open space are interrupted only by the cast-iron columns. The fifth floor has slanting walls and dormers created by the Mansard roof.

*It was common cotton mill practice to place the picking machinery in a separate wing, isolated from the main mill by fireproof doors, because of the considerable liability of fire in the pickers. These machines operated at high speed, the stones and other bits of rubbish in the raw cotton frequently striking sparks when passing the metal parts of the machine, igniting the mass of cotton.

2. Basement: In the basement of the south section are two cast-iron turbine casings and a governor which are undoubtedly originals. The turbine runners (moving parts), however, have probably been replaced several times. According to its Illustrated Catalogue (1876), the Holyoke Machine Co., Holyoke, Mass., built two 102-inch Boyden-type turbine water wheels, 800 horse-power each, for the Harmony Mill in Cohoes.* The governor was manufactured according to Snow's patented design in Bennington, Vermont. Although the turbines are no longer in use as the mill is no longer powered by water, they remain entirely intact and are excellent specimens of typical nineteenth century hydraulic power machinery. The original turbines in the north half of the mill, made by Ames and Co., have been removed. The two surviving turbines in the south half are unmarked, but are unquestionably the pair by Holyoke, who were one of about four builders of large Boyden wheels. As noted above, the basement also contained a large work space.

3. Stairways: The four stair towers and the central pavilion contain curving wood staircases.

4. Flooring: Wood

D. Site:

1. General setting and orientation: Southwest bank of the Mohawk River, on the northeast side of North Mohawk Street, facing the Cohoes Power Canal.

2. Related structures: Mill No. 3 is part of an industrial complex consisting of about eight major mill buildings plus a variety of secondary service structures.

*"The economical use of water is not its only . . . excellence; for it is the most substantial and permanent of the fixtures of a mill, and all the parts can be inspected without being taken apart. It occupies but little space above the wheel-pit; and all its connections being made water-tight, the room may be kept dry and clean." (Catalogue, p. 5). These were the largest wheels on the company list to that date and nearly the most powerful.

Prepared by Richard J. Pollak
Professor of Architecture
Ball State University
22 August 1969

Additional notes by Robert M. Vogel
Curator
Division of Mechanical &
Civil Engineering
Smithsonian Institution

PART III. PROJECT INFORMATION

These records were prepared as part of the Mohawk-Hudson Area Survey, a pilot study for the Historic American Engineering Record which was established in 1969 under the aegis of the Historic American Buildings Survey. The project was sponsored jointly by the National Park Service (Historic American Buildings Survey), the Smithsonian Institution (National Museum of History and Technology), the American Society of Civil Engineers (National Headquarters and Mohawk-Hudson Section), and the New York State Historic Trust. The field work and historical research were conducted under the general direction of Robert M. Vogel, Curator of Mechanical and Civil Engineering, Smithsonian Institution; James C. Massey, Chief, Historic American Buildings Survey; and Richard J. Pollak, Professor of Architecture, Ball State University, Project Supervisor; and with the cooperation of the Department of Architecture, Rensselaer Polytechnic Institute.

Addendum to:
HARMONY MANUFACTURING COMPANY: MILL NUMBER 3 **HAER No. NY-5**
(Harmony Manufacturing Company: Mastodon Mill)
100 North Mohawk Street
Cohoes
Albany County
New York

HAER
NY,
1-COHO,
2-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

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NY,
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Data pages 1 through 11 were previously transmitted to the Library of Congress. This is data page 12.

INVENTORY OF PHOTOGRAMMETRIC IMAGES

The glass photogrammetric plates listed below are not reproducible except with special permission. However, reference prints and film copy negatives have been made from the plates indicated by an asterisk (*) and are included in the Library of Congress collection of formal HABS/HAER photographs.

3 5" x 7" glass plate negatives (one stereotriplet) produced by Perry E. Borchers of the Ohio State University in 1971.

One survey control contact print from each plate; survey control information for the set.

LC-HAER-GS05-B-1971-901L CENTRAL TOWERS, INCLINED

LC-HAER-GS05-B-1971-901L I * CENTRAL TOWERS, INCLINED

LC-HAER-GS05-B-1971-901R I CENTRAL TOWERS, INCLINED

901L and 901L I overlap: 90%
901L I and 901R I overlap: 95%

3 Stereopair sets of 2.5" x 2.5" master contact prints mounted on 5" x 7" cardstock.

No survey control information; overlap not calculated. Copy Prints and copy negatives have been made from both prints for each pair.

LC-HAER-PS13-2000-301 *	WEST FRONT, WITH TOWERS
LC-HAER-PS13-2000-302 *	WEST FRONT, WITH TOWERS
LC-HAER-PS13-2000-303 *	WEST FRONT, SOUTH END

PROJECT INFORMATION STATEMENT

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HAER NY-5
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PHOTOGRAPHS

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