

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

PH0688207

FOR NPS USE ONLY	
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DATE ENTERED	NOV 20 1978 DEC 29 1978

**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

Joshua Thwing Gristmill

AND/OR COMMON

Joshua Thwing Gristmill/Hill-Martin Corporation

2 LOCATION

STREET & NUMBER

450 North Main Street

__NOT FOR PUBLICATION

CITY, TOWN

Barre

__VICINITY OF

CONGRESSIONAL DISTRICT

Vermont

STATE

Vermont 05641

CODE

50

COUNTY

Washington

CODE

023

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE
<input checked="" type="checkbox"/> BUILDING(S)	<input checked="" type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> MUSEUM
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input checked="" type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> COMMERCIAL
<input type="checkbox"/> SITE	PUBLIC ACQUISITION	ACCESSIBLE	<input type="checkbox"/> EDUCATIONAL
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> ENTERTAINMENT
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> GOVERNMENT
		<input checked="" type="checkbox"/> NO	<input type="checkbox"/> INDUSTRIAL
			<input type="checkbox"/> MILITARY
			<input checked="" type="checkbox"/> OTHER: Vacant

4 OWNER OF PROPERTY

NAME

Hill-Martin Corporation

STREET & NUMBER

450 North Main Street

CITY, TOWN

Barre

__VICINITY OF

STATE

Vermont 05641

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Office of City Clerk & Treasurer, City Hall

STREET & NUMBER

12 North Main Street

CITY, TOWN

Barre

STATE

Vermont 05641

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Vermont Historic Sites & Structures Survey

DATE

1972

__FEDERAL STATE __COUNTY __LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Vermont Division for Historic Preservation

CITY, TOWN

Montpelier

STATE

Vermont 05602

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input checked="" type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input checked="" type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Joshua Twing¹ Gristmill is located on a tract of land between the north side of the Stephens Branch of the Winooski River and the south side of U.S. 302. The Montpelier and Barre Railroad has a right of way along the northern side of the property close to the road.² This tract of land now serves as the base of operations for the Hill-Martin Corporation which sells heavy equipment. The lot is unpaved and unlandscaped and is used partly to stockpile parts and equipment. At right angles to the gristmill, which sits on an unfilled bank along the stream, are three connected industrial buildings dating from the 1940's on. None have any significance and are therefore considered non-contributory in the gristmill nomination.

The Twing gristmill is a five-bay, brick veneer, solidly Greek Revival style building with an asphalt-clad gable roof, projecting wood cornice with gable returns on the front and rear facades, and a foundation of rock-faced granite blocks. The three-story plus attic, 45' x 41' mill was built in 1844 and is presently undergoing rehabilitation for use as an office by the Hill-Martin Corporation. A 26' x 30' addition forming an entrance lobby and stairway access to the second floor of the mill is being constructed on the mill's northwest side just in front of the adjacent building. This addition will provide direct access from one building to the other.

On the front facade of the gristmill is a centrally located, projecting stair-tower with an open wagon way at the first level. This passage contains a Fairbanks platform scale operated from just within the central first-floor entrance. A trap door above the passage allowed sacks to be hoisted up to the third story. The exterior of the stairtower is rich in ornamentation: above the high foundation of rock-faced granite slabs are dressed granite blocks positioned as quoins. At the second-floor level is an entrance consisting of Greek Revival, 8-paneled, double leaf doors that were built to slide into the walls; at some point the stairs to this entrance were removed. Immediately above the doorway, which has a granite architrave and sill, is a marble plaque with 1844 in relief. A 12/8 light, double-hung window is centered above at the third floor level.

Window openings are trabeated with rectangular granite lintels and sills, and on the front facade they flank the stairtower in a symmetrical arrangement. Many of the original sash remain. Throughout the building sash are either 12/12 light (first and second floors) or 12/8 (third floor and attic). At some point the first-floor front windows and surrounding wall area were removed to create large entrances, as evidenced by the four vestigial granite lintels. Currently these openings are being rebuilt into windows. The rear of the building is well lit with four window bays on the first

¹Spelled Thwing by most generations of the family. Joshua Twing preferred to omit the h.

²There is no apparent reason to include the railroad within the boundary of the nomination since maps indicate that the tracks were laid in the late nineteenth century along the border of Twing's complex.

8 SIGNIFICANCE

PERIOD		AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION		
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE		
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE		
<input type="checkbox"/> 1600-1699	<input checked="" type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN		
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER		
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION		
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input checked="" type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)		
		<input type="checkbox"/> INVENTION				

SPECIFIC DATES 1844

BUILDER/ARCHITECT Joshua Twing

STATEMENT OF SIGNIFICANCE

The 1844 Greek Revival style Twing Gristmill in Barre, Vermont was designed as a "model mill" by a regionally prominent millwright and mechanic, Joshua Twing (1784-1865) and was part of an industrial complex Twing developed over several decades as his base of operations. Architecturally, it represents an unusual departure from utilitarian building convention of that time particularly because of its lavish interior detail which Twing borrowed directly from high style Greek Revival domestic architecture. Secondly, the gristmill is the last extant building of a basically pre-Civil War industrial complex that was largely developed to support a mill building and iron castings trade. The complex grew during a transitional period in American technology with each decade bringing closer full-blown mechanization and mass production. Thus the gristmill represents on a technological level the actualization of ideas of a man whose life's work centered on the type of mechanical experimentation and innovation that contributed to this transition. Finally, the basic site of the complex is being included in the gristmill nomination because of the possible archeological information it is likely to yield on a number of areas.

With respect to the building's architectural significance, Twing eschewed the customary, utilitarian gristmill design of his time and incorporated elements from more substantial contemporary industrial buildings--e.g. a formalized design scheme, a projecting staintower, and masonry. In addition he endowed the gristmill with unusual architectural distinction (for any industrial building) by the extensive use of such interior detail as a double spiral staircase, architraves, panelled dados, marbleized columns, wallpaper with a partially flocked border. The idiom of high style Greek Revival domestic architecture was here applied directly to enrich industrial function. On the exterior, granite was liberally used for decorative trim at a time when rudimentary quarrying and transportation methods--even with local quarries in Barre--meant no small expense. Also of note was Twing's experimentation with a transitional type of framing--a combination of post and beam and balloon framing--as well as the cast-iron column capitals. (Twing probably made these in his own foundry, since both his house and others in Barre of similar date showed this same type of capital. Twing's house is no longer standing.)

Although the mechanical system of the gristmill has not survived, there is still part of the horizontal conveyor system in situ in the attic. Of the type developed by Oliver Evans and illustrated in his publication of 1797, The Young Mill-Wright and Miller's Guide, it works on the principle of an Archimedean screw, that is, an endless screw turning in a trough propelling the grain forward.

Twing purchased the lot on which the gristmill is still standing in 1807 (a sawmill and gristmill were already there), and the first known building to be constructed was a

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Adams, William ed. Gazetteer of Washington County, Vermont, 1783-1889. Part First. New York: The Syracuse Journal Co., 1889.

Hefner, Robert J. "Joshua Twing's Gristmill." Paper prepared under the supervision of Chester H. Liebs, Historic Preservation Graduate Program, University of Vermont, Burlington, Vermont 05405.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1+

UTM REFERENCES

A	1,8	6,8,9	7,4,0	4,8	9,7	4,2,5	B					
	ZONE	EASTING	NORTHING	ZONE	EASTING	NORTHING						
C							D					

VERBAL BOUNDARY DESCRIPTION

The nominated property consists of the area bounded on the south by the low water mark of the north side of the Stevens Branch of the Winooski River; on the east by a line parallel to the southeastern (left) facade of the gristmill and 175 feet from it; on the north by the southern boundary of the right-of-way of the Montpelier-Barre Railroad; and on the west by a line beginning at a point on the southern edge of said right-of-way, at the intersection with the extension in a northeasterly direction of the line of the northwestern facade of the addition to the gristmill; thence proceeding generally

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Miriam Tremontozzi, Preservation Planner

ORGANIZATION

DATE

November 6, 1978

STREET & NUMBER

97 Lakeview Terrace

TELEPHONE

(802) 862-5074

CITY OR TOWN

Burlington

STATE

Vermont 05401

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

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 National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

William B. Timney

TITLE State Historic Preservation Officer

DATE November 14, 1978

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I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DIRECTOR, OFFICE OF ARCHEOLOGIST AND HISTORIC PRESERVATION

ATTEST: *William H. Brannan* 12.29.78

KEEPER OF THE NATIONAL REGISTER

DATE

12/25/78

DATE

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and second floors, three bays on the third, and a single window in the gable peak. The sides have one window bay at each story level (that is, first and second). A new window is being added to the first-floor level of the southeast facade.

The interior has undergone far more change over the years than the exterior, and virtually nothing remains of the mechanical system related to the milling operation. By 1910 the gristmill had become a storage house, a use which it has basically retained.

The interior is of slow-burning construction and has, in general, 3" plank floors (random width) and plaster and lathe walls. Both post and beam construction and balloon framing were used in combination for a structural system. The heavy turned wood columns once needed on the first-floor level to support the three massive millstones above have been recently removed. In addition so has much of the heavy post and beam construction of the basement; the basement has been filled in, and concrete poured to form a surface for the ground floor. Other structural supports in the form of attenuated wooden columns with marbleized finish and cast-iron Ionic capitals constitute one of the gristmill's most outstanding interior features. Used on both the first and second floors, the columns, which are temporarily removed for repair, are to remain as an important part of the adapted space.

An interior stair which once provided access to the second floor was removed at some point, and now only a rectangular opening in the floor allows for passage. The second floor is still the showplace of the gristmill, though much deteriorated. Despite the fact that this floor was the heart of the milling operation--here the grain was ground, sifted, and graded--the wall surfaces were decoratively treated and with a high degree of finish. Running under the windows around almost the entire room are panelled dados with grained rails and stiles and marbleized center panels. Wallpaper was originally used, and some traces still exist of what was most likely the original installation. It consists of a flower and urn design in a vertical pattern alternating with a decorative vertical band, all on a background of applied color. In addition a flocked and stencilled border paper with a colorful flower and leaf design was used. Windows, also elaborately treated, have deep, splayed reveals, sills which run in an unbroken manner with the dado rails, and Greek Revival architraves and corner blocks. Ground floor windows were finished in a like manner.

On the second floor a 6-panelled interior door leads to the stairtower which contains another outstanding architectural feature of the mill: a double spiral staircase. From either side of the exterior sliding doors a narrow stair spirals along the plastered walls and rounded corners of the stairtower to a small bowed landing at the entrance to the third floor; thus the center space was kept free for

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PAGE TWO

the hoisting of loads through the stairtower. Most of the decorative detailing-- e.g. balusters, handrails--were removed; however, the four newel posts, which are of two different designs, still remain.

Despite the dismantling of the mechanical system, various changes as cited, and the years of minimal maintenance, the Twing gristmill has retained the bulk of its significant design features and stands as a remarkable example of a mid-nineteenth-century mill building with a high degree of architectural presence.

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foundry in 1818. The complex also included a millhouse, machine shop (1833), and a sawmill (possibly the original one). Eventually a community developed in this north area of Barre and was called "Twingsville."

Twing's operations were various: mill building in Vermont and other New England states; the production and supply of iron castings of all kinds from items of utility such as stoves to mill gearing and other mill parts; manufacture of water wheels (possibly at some point, turbines) and the development of water wheel technology; design of machinery for some manufacturing processes; custom grain grinding. Built when Twing was sixty, the gristmill is important primary evidence of a life's work based on technological innovation and development. It is the only extant building in the complex much of which was demolished in 1960.

The firm that purchased the complex after Twing's death, Smith, Whitcomb, and Cook, continued on in similar lines at least for twenty years or more. Identified by the 1870 Census of Industry as a water wheel manufactory, and, in 1889, advertising "an improved Barre turbine water wheel," the firm apparently advanced the work Twing was doing on water wheel technology. The site of the complex, then, is important for inclusion within the gristmill nomination for the possible archeological information it may be likely to yield on: the functional relationship of these buildings; their possible adaptation over a period of seventy-five years or more; technological advances during that time-span; and, the evolution of water power technology and the transfer of power from building to building. The boundary for the nomination thus includes the area that is most likely to yield such information.

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Liebs, Chester, and Fisher, Courtney. Measured drawings of the Joshua Twing mill, 1972. Chester Liebs, Historic Preservation Graduate Program, University of Vermont, Burlington, Vermont 05405.

Sanborn Map Co. Insurance maps of Barre, Vermont for the years: 1895, 1900, 1911, 1916, 1925.

Thompson, Zadock. History of Vermont: Natural, Civil, and Statistical. Part Three. Burlington: Chauncey Goodrich, 1842.

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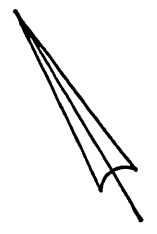
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southwesterly along said extension and elevation, to the western corner of said addition; thence proceeding generally southeast along the southwestern facade of said addition, to the point where it joins the main block of the gristmill; thence proceeding generally southwest, along the northwestern (right) facade of the gristmill, and its extension in a southwesterly direction, to the intersection of this line with the low water mark of the north side of the Stevens Branch of the Winooski River.

JOSHUA TWING GRISTMILL
BARRE, VT



SEMINARY ST

N. MAIN

MONTPELIER BARRE RR

ADDITION
(1972)

GRISTMILL

NON-CONTRIBUTORY FACTORY BUILDINGS

STEPHENS BRANCH

----- Boundary

MAP NOT TO SCALE

