

The Old Mill



Nantucket Historical Association

Mill Hill

**A National Historic
Mechanical Engineering Landmark**

Designated October 3, 1992



The American Society of
Mechanical Engineers

THE OLD MILL

Historical Significance of the Landmark

Windmills were first constructed by the English as early as 1200 A.D. and their general use throughout Europe had developed reasonably well by the time they arrived in North America. However, the earliest settlers initially chose to adopt the methods already in use by the native Americans. These methods involved the use of two stones. One large stone would have a cavity in which the grain to be ground was placed, and the second smaller stone was placed on top of the grain in that cavity. The smaller stone was then rotated until the desired effect was obtained.



In fall 1984 the Old Mill grinding stones were redressed by Charles Howell, a fifth-generation miller, of Sleepy Hollow Restoration, Tarrytown, New York.

regionalized and local windmills were unable to compete.

Harnessing the year-round winds on Nantucket came through the vision of Nathan Wilbur in the 18th century. A Nantucket sailor, Nathan Wilbur, had visited Holland many times and observed their many windmills. Recognizing that the island needed an efficient process for grinding locally grown grains and that winds were plentiful and consistent on Nantucket, he saw the windmill as a solution. He observed as many Dutch mills as

possible and took detailed notes on their structure and mechanics. This led to the plan for the "Old Mill," which was constructed in 1746. This mill is known as a smock-type mill because of its shape and general appearance, very similar to the Dutch mills. Initially Nantucketers laughed at Wilbur's wild scheme and offered no assistance to the financing or construction of the mill. When its benefits became evident, he was vindicated and became somewhat of a folk hero in the area.



The mill exists today on its original foundation on Mill Hill and is the first of four mills constructed on Nantucket. The mill contains over 80 percent of its original materials, which consists of wooden beams and planking that were materials from shipwrecked vessels washed ashore on Nantucket. The granite millstones were quarried in Quincy, Massachusetts, in 1745.

The Old Mill is believed to be the largest and oldest windmill in the United States still in operating condition and open to the public on a regular basis.

NANTUCKET



Description of the Landmark

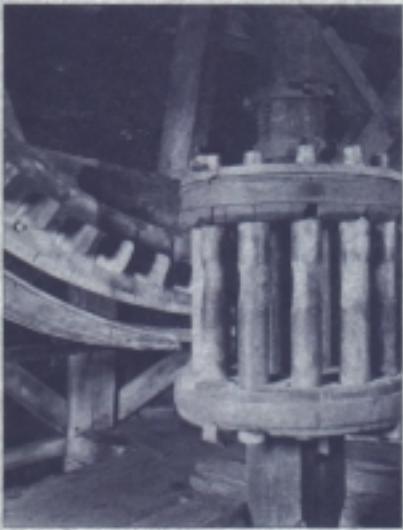
Sitting on a stone foundation, the windmill is a 50-foot octagonal structure with three floor levels. It has a revolving pent roof, or "cap," which is moved in order to turn the 30-foot-long vanes (to which the sails are lashed) into the prevailing winds. The cap turns on its circular wooden base, which fits into a slotted circle at the top of the basic structure. The cap is turned from the ground by moving a 50-foot tail pole, which is permanently attached.

Eight posts frame the exterior wall of the tower and run from the sills to the eaves. All floor and wall framing is mortised, tenoned, and hickory-pegged, and with few exceptions, date from 1746. The primary structural wood is oak. Doors and windows

are plank-framed with a single shutter hinged to each window frame.

The interior mechanism is remarkable from an engineering standpoint. The vanes turn a huge gear mechanism made of wood, with some iron reinforcement. In turn, the moving gears force the top grinding stone to revolve. A wooden brake governs the speed of the vanes and stone. At the present time, the mill operation produces 5,000 pounds of meal from corn during the summer season.

Designation



The lantern wheel and main drive gear are parts of the grinding mechanism visible on the third floor.

Engineering Heritage Collections have been recognized. Each reflects its influence on society, either in its immediate locale, nationwide, or throughout the world.

An ASME landmark represents a progressive step in the evolution of mechanical engineering. Site designations note an event or development of clear historical importance to mechanical engineers. Collections mark the contributions of a number of objects with special significance to the historical development of mechanical engineering.

The ASME Historic Mechanical Engineering Recognition Program illuminates our technological heritage and serves to encourage the preservation of the physical remains of historically important works. It provides an annotated roster for engineers,



West side of the Old Mill under sail.

students, educators, historians, and travelers. It helps establish persistent reminders of where we have been and where we are going along the divergent paths of discovery.

The History and Heritage Program of the ASME

The ASME History and Heritage Recognition Program began in September 1971. To implement and achieve its goals, ASME formed a History and Heritage Committee, initially composed of mechanical engineers, historians of technology, and curator (emeritus) of mechanical engineering at the Smithsonian Institution. The Committee provides a public service by examining, noting, recording, and acknowledging mechanical engineering achievements of particular significance. The History and Heritage Committee is part of the ASME Council on Public Affairs and Board on Public Information. For further information please contact Public Information, American Society of Mechanical Engineers, 345 East 47 Street, New York, NY 10017-2392, 212-705-7740, fax 212-705-7143.

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NATIONAL HISTORIC MECHANICAL ENGINEERING LANDMARK THE OLD MILL 1746

THIS "SMOCK" TYPE WINDMILL, CONSTRUCTED BY NATHAN WILBUR, PROBABLY IS THE OLDEST OPERATING WINDMILL IN THE UNITED STATES. MOST OF ITS PARTS ARE ORIGINAL.

WINDMILLS ARE AMONG THE EARLIEST DEVICES FOR CONVERTING FLUID ENERGY TO MECHANICAL ENERGY. THEY ALSO REPRESENT ONE OF THE SOURCES OF MECHANICAL TECHNOLOGY, THEIR GEARS AND BEARINGS SUBSEQUENTLY BEING DEVELOPED INTO IMPORTANT MECHANICAL COMPONENTS.



THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS 1992

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cover:

*woodcut of the Old Mill
done by Nantucket artist
Howard Fraker*