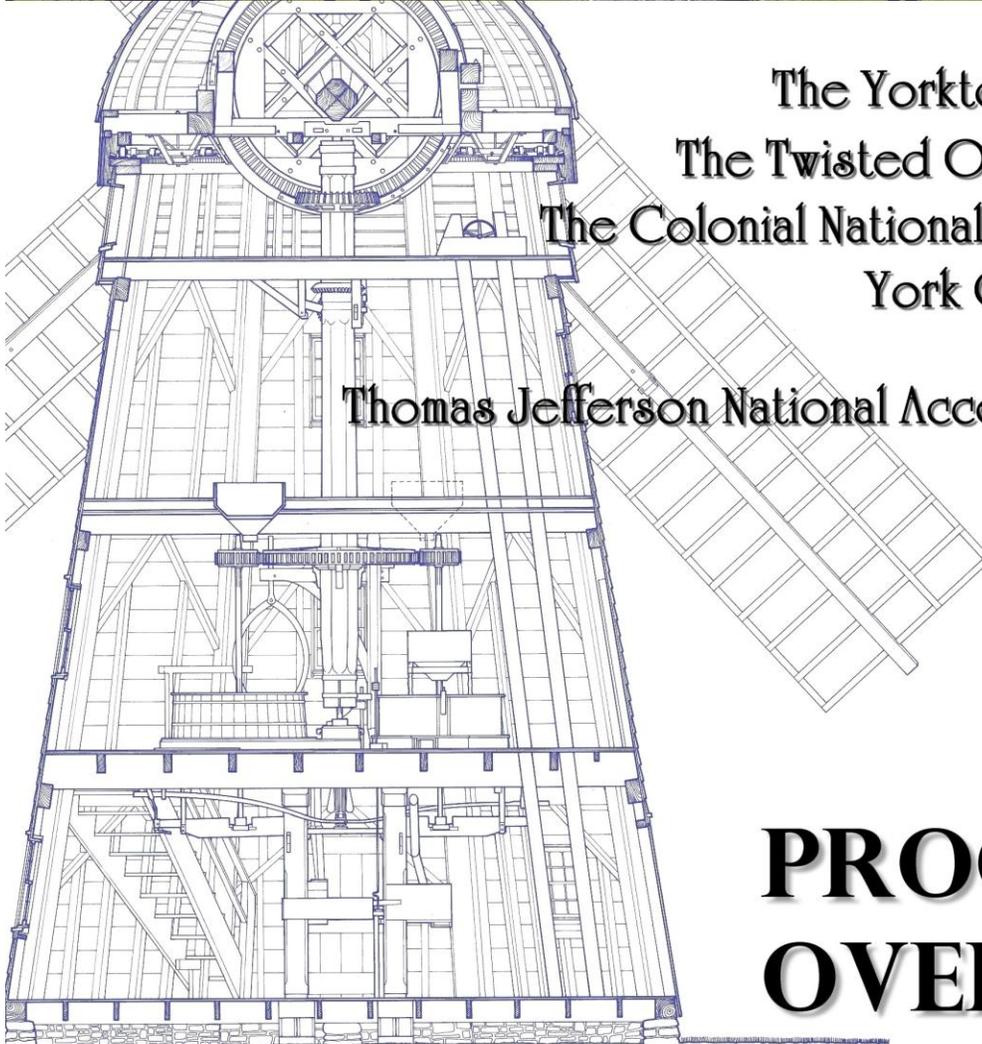
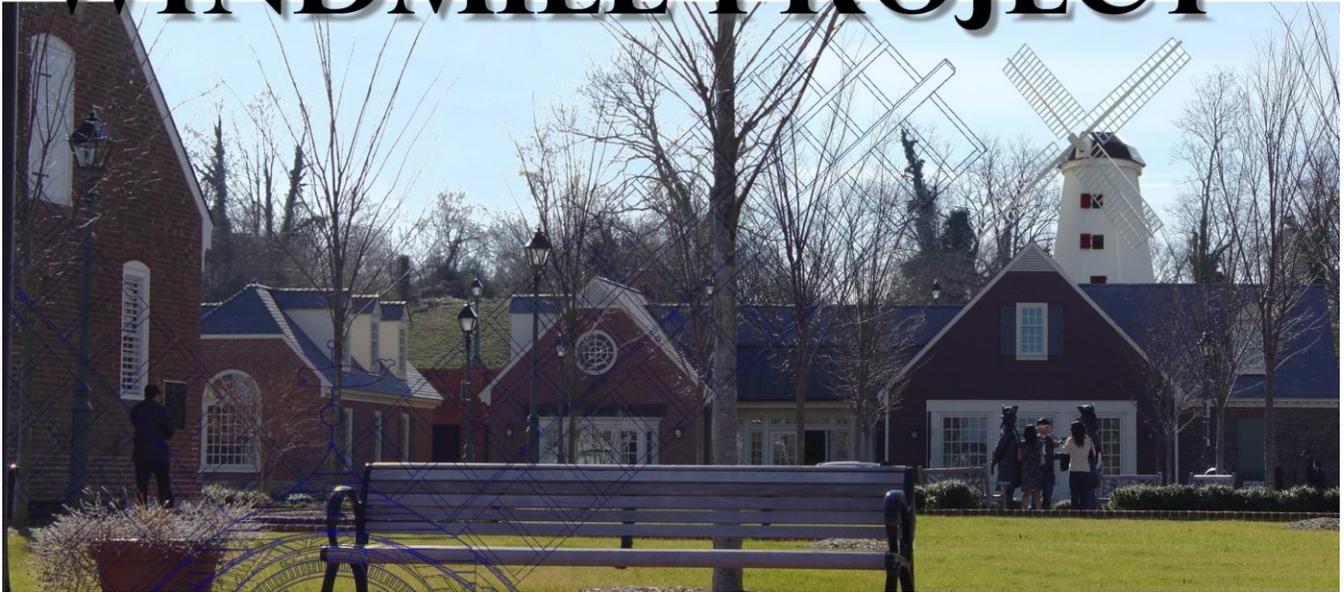


# THE YORKTOWN WINDMILL PROJECT



A Project of  
The Yorktown Foundation  
The Twisted Oaks Foundation  
The Colonial National Historical Park  
York County, Virginia  
and  
Thomas Jefferson National Accelerator Facility

## PROGRAM OVERVIEW

*"Pursue Greatness"*

## History of the Yorktown Mill and Waterfront Area

### Historical References to the Yorktown Mill

In 1784, following the surrender of Yorktown, Charles W. Peale painted a famous image depicting George Washington on the banks of the York River. This painting, entitled “*Washington and his Generals at Yorktown*”, prominently displays the Yorktown windmill on the bluff overlooking the waterfront.

While details of the windmill are difficult to obtain from the painting, it is evident that it is a traditional *smock windmill*, similar to others still standing in the northeastern United States. For many years the windmill served as a point of reference both for travelers on land and on the York River. Notably, most historic maps depicting Yorktown’s role in the Revolutionary War and the American Civil War portray the mill as a primary feature.

Documents available from the Library of Congress show the windmill as a prominent landmark on several maps from Washington’s Siege of Yorktown in 1781. Throughout the 19<sup>th</sup> century, references to the mill became increasingly prominent and the Yorktown Windmill appears on most maps of the Civil War’s Peninsula Campaign.



### Construction of the Original Mill

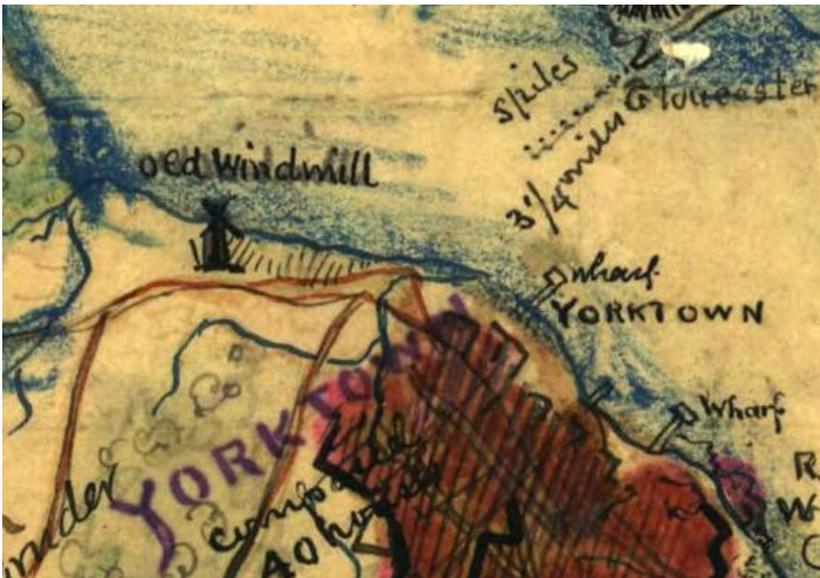
In her book *The Intrepid Ballards*, M.K. Ballard-Pringle remarks that the mill was constructed around 1700 by William Buckner, the son-in-law of Tom Ballard. The site became commonly known as Windmill Point during the 18<sup>th</sup> Century.

This date is supported by the research of Charles B. Saunders who states that “in 1711 he (Buckner) purchased land on a pointed bluff just above Yorktown and built a windmill to grind corn.” Likewise, the records of Gloucester and York County show that on July 16<sup>th</sup>, 1711 the land was deeded from John Lewis “to William Buckner of York for to build a Windmill upon sold one acre near Yorktown.”

### Last Days of the Yorktown Mill

Comments regarding the destruction of the mill are ancillary. In the book *Old Churches, Ministers and Families of Virginia*, Bishop William Meade makes reference to the demise of the windmill in a discourse on Selim the Algerine in which he states, “When in Yorktown, the old windmill (which was blown down by a late tornado, and was long a relic of olden times, and which ground nearly all the bread used in York) was his resting place.” Published in 1891, this book provides the most direct reference to the loss of the windmill.

Despite the absence of records and architectural drawings, many of the characteristics of the windmill can be inferred from references in local



Yorktown Windmill on Civil War Map

literature and from surviving photographs of other regional mills.

For instance, the Matthews Windmill stood in Gloucester, Virginia until at least 1915 when it was photographed for inclusion in Lancaster's book on Historic Virginia Homes and Churches.



*Matthews Windmill – circa 1915*

While this mill may not precisely match the Yorktown Windmill, they were contemporaries and both are found on maps from the 18<sup>th</sup> and 19<sup>th</sup> Century.

## **Reasons to Rebuild the Yorktown Windmill**

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### **An Extension of the Waterfront Revitalization**

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York County began planning the revitalization of the Yorktown Waterfront during the *Focus on Yorktown* Workshop of 1989. Over the next decade this plan evolved to include the incorporation of the Freight Shed as a central feature of Riverwalk Landing, the development of a Waterfront Commons area with shops and performance venues, the construction of a new wharf/pier complex which extends far enough into the river to allow deeper draft vessels to dock, and the construction of a new parking plaza to accommodate visitors to Yorktown.

On Memorial Day 2005, the community celebrated the Grand Opening of Riverwalk Landing. Since that time the Yorktown waterfront has become a featured venue for the Virginia Symphony, military bands and weekly music festivals during the summer. The new piers accommodate a steady stream of cruise ships during

the spring, summer and fall, and Yorktown beach remains a favorite for local beach patrons.

While the revitalization effort has made great strides in bringing tourism to the waterfront area, even greater advances are possible. Properly placed, this windmill would provide a prominent and distinctive attraction that would have immediate visual appeal to families traveling across the Coleman Bridge – potentially to other destinations.

The structure would also provide a unique ambience to the waterfront venue. Those in attendance during the Virginia Symphony performance of 2006 when several tall ships docked along the waterfront during the performance can attest to the impact that such a unique, visual event can have. Consequently, the presence of this windmill would provide a visual enhancement to an already extraordinary venue.

### **A Mechanism for Promoting Tourism**

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The mill would provide a striking first impression for the cruise ships that dock in Yorktown during the summer. Currently many of these cruise lines disembark their passengers in the morning and immediately bus them to see the attractions in Williamsburg, only returning to Yorktown in time to reboard the ship for the evening. The windmill would offer a distinctive attraction to visitors and would provide encouragement for shipboard tourists to make Yorktown a destination rather than a point of entry.

### **An Opportunity for Education**

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Superintendent Dan Smith of the Colonial National Historical Park believes that the mill would be a compelling addition to the historic area. Aside from providing a new interpretive opportunity for Park Service staff to discuss the history and significance of milling during the Colonial period, the location of the mill would encourage more cross-pollination between visitors to Riverwalk Landing and visitors to the CNHP.

Future expansion of the educational outreach might include a weekend youth program allowing young people to examine scale models of the mill's mechanisms on the Riverwalk common. A full-size vane could be made available as well; allowing visitors to appreciate the actual size of the components. These programs could easily be administered by volunteers working under the auspices of the York County Division of Parks and Recreation and would add a new dimension of learning and enjoyment to our historic community.

## Site Alternatives for the Project

During an evaluation of the town and discussions with the National Park Service officials, two sites were identified as being preferred locations for the windmill. Site A is located on the hilltop above Riverwalk Landing and Site B is located at the original Windmill Point. The merits and drawbacks of each location are discussed in the following sections.

### Site A: Riverwalk Landing

This site is owned by York County and has the following considerations:

#### Benefits of the Riverwalk Landing Site

- The site is clearly visible throughout the village. The windmill would be a central feature of the renovated waterfront and provide a visual enhancement to an already attractive venue.
- The mill would be visible to traffic approaching York County across the Coleman Bridge and would provide a unique attraction to tourists and visitors who might not otherwise visit Yorktown.
- The mill would be clearly visible from the waterfront and would provide an immediate and prominent

point of interest for the cruise ships that frequent Yorktown in the summer.

- The site provides adequate existing parking and ease of pedestrian access.
- The site would provide an interpretable venue for the National Park Service to describe the role of mills as part of early American industry.
- The site would serve to draw pedestrian traffic through town – from the National Park Service Visitor Center to the Waterfront.
- The site is flat, well-graded and stable. Very little work will be required to make this location suitable.
- Because this project directly promotes tourism in Yorktown, it may be eligible for funding through the York County Tourism Program.

#### Concerns with the Riverwalk Landing Site

- While the National Park Service can exercise latitude in the application of International Building Code requirements, the County is governed by the laws and standards of the Commonwealth of Virginia and must require exacting compliance. This may represent a challenge in constructing a historically accurate representation.



Aerial View of the Proposed Sites

- Because the site is easily accessible by visitors, on days when the mill is operating, a *responsible party* will need to be posted to ensure that visitors keep a safe distance.
- Similarly, when the mill is not in operation, the vanes will need to be ‘parked’ at 45 degrees and secured to the structure with safety cables. A fence may be required to maintain visitors at a safe distance.

### **Site B: Windmill Point**

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This site is owned by the National Park Service and has the following considerations:

#### **Benefits of the Windmill Point Site**

- The site is the documented location of the original mill. Consequently, constructing the mill here would represent a more authentic placement.
- The property is owned by the National Park Service who would have greater latitude (and motivation) to construct a mill that is historically authentic.
- Safeguards required around the mill structure would not be as stringent because the location is not easily accessible by pedestrian or motor traffic.



*Windmill Point Today*

#### **Concerns with the Windmill Point Site**

- There are no existing roads to the site and it is surrounded on all sides by a steep ravine. An historic road was there, but has since been overgrown and covered by fallen timber. Delivery of construction material to the site would be challenging and costly.
- The site and adjoining hillside is heavily wooded; several of the trees are more than 100 years old.

Construction would require that many of these trees be removed.

- The vegetation on the hillside inhibits erosion and helps maintain the stability of the bluff. Removal of this foliage is likely to destabilize the ground and result in significant soil loss.
- Because the original windmill was previously on this site, any excavation is likely to uncover archaeological artifacts. Consequently, construction here would require an archaeological survey, a review under Section 106 and an evaluation by the State Historic Preservation Office. These reviews are estimated to take a minimum of two years to complete.
- The site is currently inaccessible by pedestrian or vehicular traffic. Should the National Park Service wish to permit visitors to the location, they would have to construct a walkway along the steep ravine adjacent to Water Street.
- A windmill constructed on this site would not be visible from the Riverwalk area or from the town; rendering it ineffective as vehicle for increased tourism.

#### **Recommendations on Site Selection**

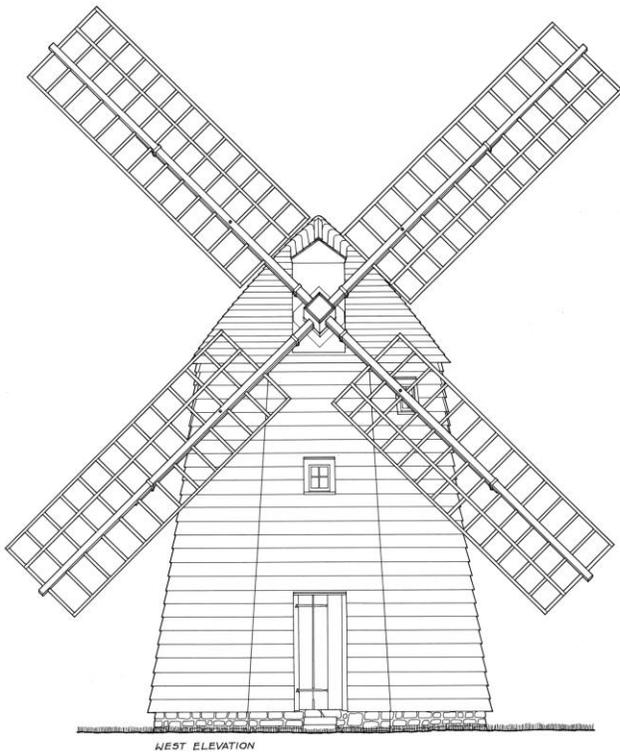
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Based on the evaluation criteria above, the Riverwalk Landing site would be the preferred location due to accessibility, site condition and overall visibility. In the event that the Riverwalk Landing site cannot be secured, the Windmill Point site should be re-evaluated to determine how much effort would be necessary to resolve or mitigate the site related concerns.

## Architectural Alternatives for the Project

Because of architectural work being conducted under the auspices of the *Historic American Engineering Record* and the *Historic American Building Survey*, a variety of architectural plans for 18th and early 19th century windmills have recently become available. The following is a collection of windmills that might be representative of the original Yorktown mill.

### The Windmill at Water Mill - 1800 *Water Mill, Long Island, New York*

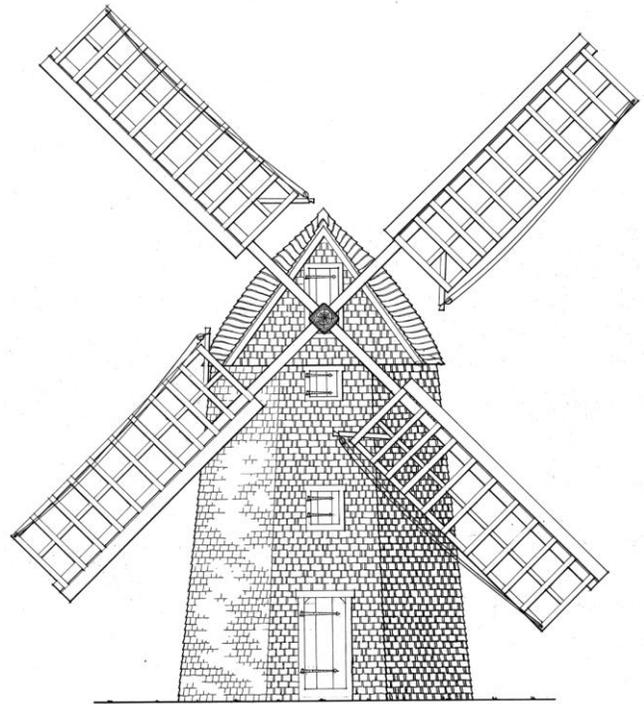


*The Windmill at Watermill*

Built in 1800, the windmill at Water Mill is one of the smallest in Long Island. The tower has a traditional planked exterior and is 43 feet tall with an octagonal base that is 29 feet in diameter. The wind vanes have a total span of 56 feet.

The *mill cap* is rotated using a *tailpole* which extends from the rear and allows the operator and a draft animal to turn the vanes into the wind. This mill remained in continuous operation until 1887, grinding both wheat and corn, and is still standing today.

### The Old Windmill at Nantucket - 1746 *Nantucket County, Massachusetts*

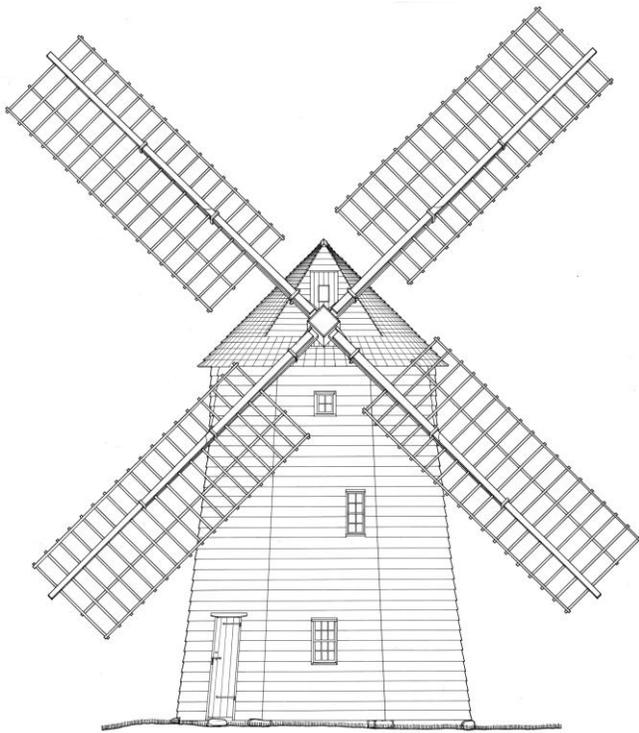


*Old Windmill at Nantucket*

This stately mill was constructed in 1746 and is characterized by its shingled sides and roof. Like most mills of the period, it has wooden gears and shafts and its direction is manipulated with a tailpole.

Although it is one of the oldest of the windmills in this collection, it is remarkably well documented and the architectural drawings provide an exceptional level of detail. The tower is 33 feet tall with an octagonal base that is 20 feet in diameter. The vane span of this mill is 52 feet.

**The Hook Windmill - 1806**  
*East Hampton, Long Island*

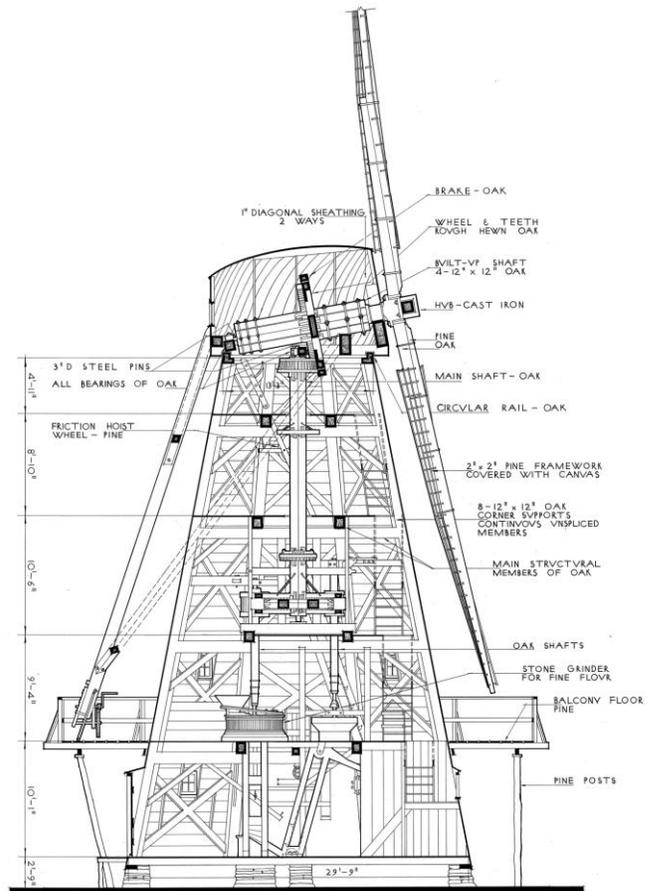


*The Hook Windmill*

Built in 1806, the Hook Windmill is one of three such mills built by Nathaniel Dominy between 1795 and 1810. This mill is one of eleven early wind-driven grist mills still remaining on the eastern end of Long Island where there are relatively few streams or sheltered tidal inlets.

This mill has a tower that is 37 feet tall with an octagonal base that is 22 feet in diameter. It boasts a vane span of 58 feet.

**The Heideman Windmill - 1867**  
*Addison, Illinois*

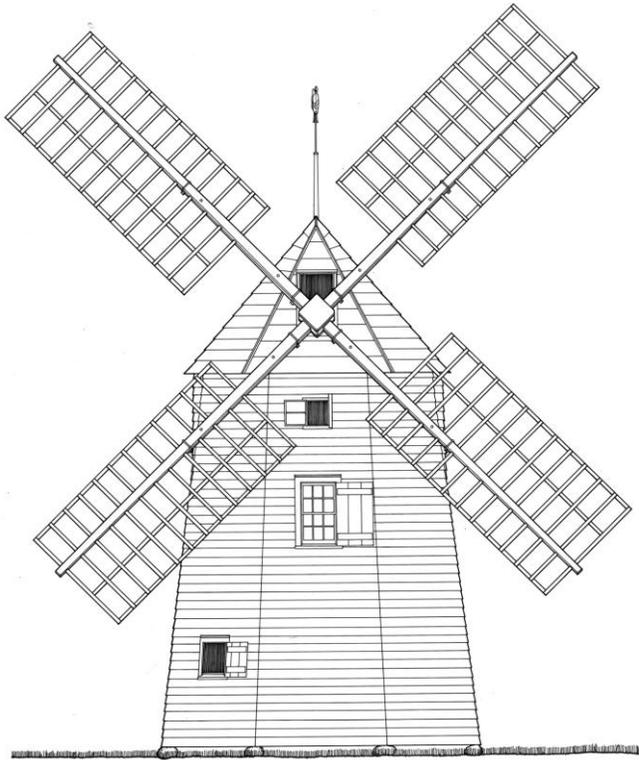


*The Heideman Windmill*

The Heideman Windmill is a Holland-style mill that was constructed in Illinois immediately following the Civil War. While this mill is inconsistent with those that might have been built in Yorktown, it is included to demonstrate the stark changes in design that occurred as the United States transitioned from its *wooden engineering age* to the *age of industry*.

The tower of this mill stands 55 feet tall with a base that is 30 feet in diameter and a vane span of 67 feet.

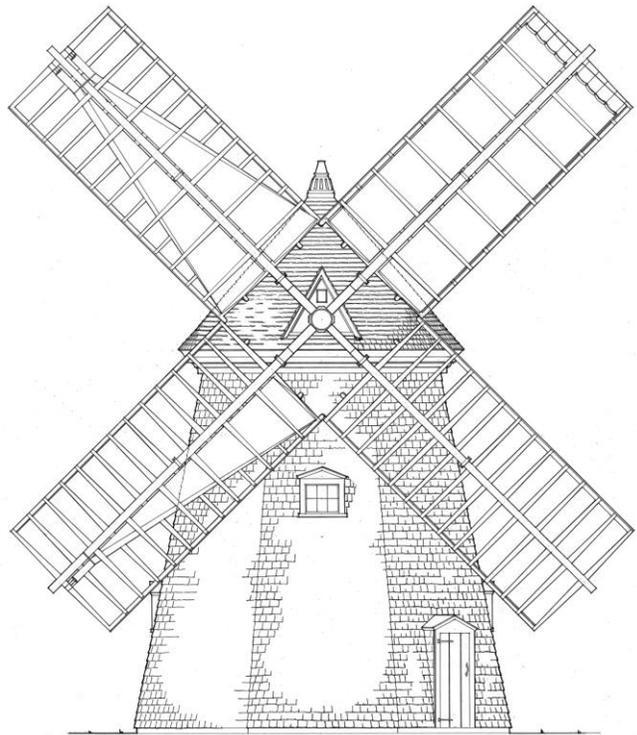
**The Gardiner's Island Windmill - 1795**  
*Gardiner's Island, New York*



*The Gardiner's Island Windmill*

This mill was the first of three built by Nathaniel Dominy. After being rebuilt in 1815, the mill remained in continuous operation and by 1885 was providing flour for the island's entire population. The mill is more compact than many others from the period. Its tower stands 31 feet tall with an octagonal base of 19 feet, and the mill has a vane span of only 43 feet.

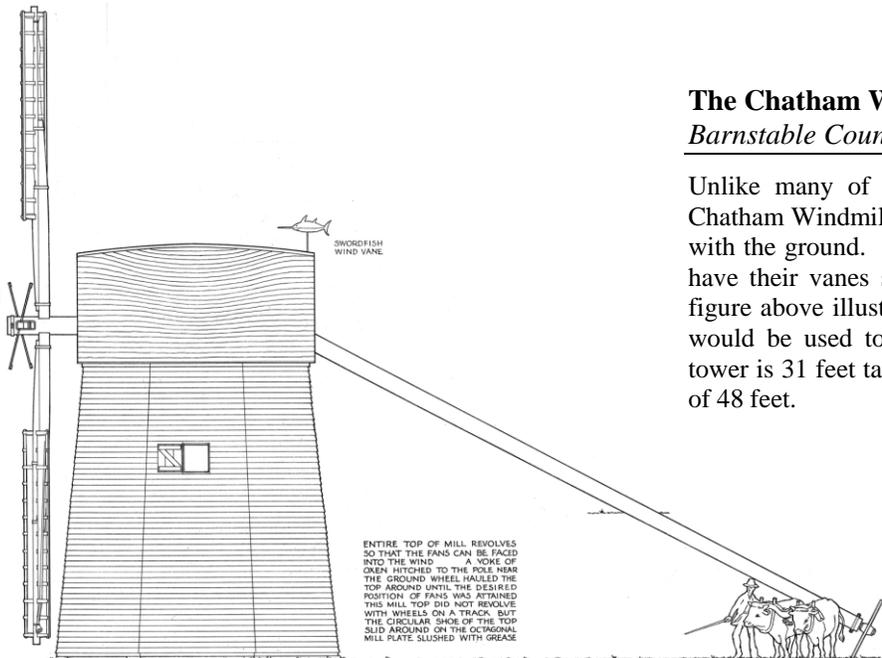
**The Cape Cod Windmill - 1793**  
*Barnstable County, Massachusetts*



*The Cape Cod Windmill*

Built in 1793, the tower of this shingled mill is 32 feet tall with an octagonal base that is 21 feet in diameter. It has a vane span of 43 feet.

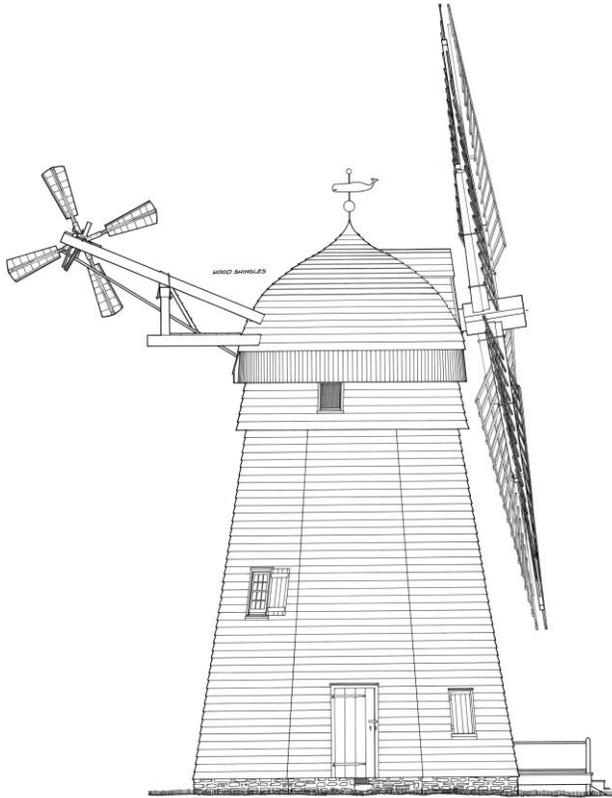
**The Chatham Windmill - 1797**  
*Barnstable County, Massachusetts*



ENTIRE TOP OF MILL REVOLVES SO THAT THE PANS CAN BE FACED INTO THE WIND. A YOKE OF OXEN HITCHED TO THE POLE NEAR THE GROUND WHEEL HAILED THE TOP AROUND UNTIL THE DESIRED POSITION OF PANS WAS RETAINED. THIS MILL TOP DID NOT REVOLVE WITH WHEELS ON A TRACK, BUT THE CIRCULAR SHOE OF THE TOP SLID AROUND ON THE ORIGINAL MILL PLATE SLUSHED WITH GREASE.

Unlike many of the other windmills in this section, the Chatham Windmill differs in that its vanes are perpendicular with the ground. Most other windmills of the period would have their vanes set at the same angle as the tower. The figure above illustrates how the operator and a draft animal would be used to turn the mill into the wind. This mill tower is 31 feet tall, 21 feet in diameter and has a vane span of 48 feet.

**The Beebe Windmill - 1820**  
*Bridgehampton, Long Island, New York*



*The Beebe Windmill*

The Beebe Windmill is a transitional mill that contains features from both the American Wooden Age and the beginning of the Industrial Age. The project was commissioned by Captain Lester Beebe who obtained numerous innovations from millwright Samuel Schellinger of England. The Beebe Windmill was one of the first American mills to include a fantail and iron gears.

The tower is 43 feet tall with an octagonal base that is 24 feet in diameter. The vane span on this mill is a formidable 64 feet.

Notably, this mill was the model for the Yorktown prototype because of its similarities to the Jamestown, Rhode Island Windmill.

**The Jamestown Windmill - 1787**  
*Jamestown, Rhode Island*



*The Jamestown Windmill*

This 30-foot-high octagonal structure sits atop Windmill Hill in Jamestown, Rhode Island. It ground corn for 109 years until it ceased operation in 1896. Several restorations were done in the twentieth century, the latest in 1981. It is presently maintained by the Jamestown Historical Society.

Plans have recently been received from Mrs. Rosemary Enright, President of the Jamestown Historic Society. While the plans do not include an exhaustive examination of the mechanism, they do reveal the scale and structural requirements for the tower. Because this mill is closest in age to the proposed Yorktown Mill, these plans might be combined with the mechanical diagrams of other mills to produce a distinctive, yet authentic, mill for our community.

## **Project Participants and Roles**

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The Windmill Project will be conducted in a manner similar to the Fifes and Drums Headquarters Program, where a variety of separate entities with specific roles and responsibilities work together to complete the project. While the duties of each participant organization may be altered because of funding, site and design selection or regulatory requirements, the following division of responsibility is expected.

### **The Yorktown Foundation**

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As a 501(c)3 non-profit corporation, the Yorktown Foundation will provide a tax-exempt funding conduit for managing funds, expenditures and purchases related to construction.

A representative of the Foundation will act as the Project Liaison and will coordinate the efforts of the other organizations to meet project goals and to ensure compliance with applicable regulations.

Working with contract and volunteer staff, the Foundation's Project Liaison will establish and publish a budget for the fabrication, assembly, erection and commissioning of the structure.

The Foundation's Project Liaison will develop and publish a schedule for project work and will coordinate contract and volunteer staff to meet the building objectives in a safe, cost-effective and timely manner.

Finally, the Foundation will develop and implement a fundraising plan to raise capital for the construction of the project.

### **York County, Virginia**

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If the structure is built on the Riverwalk Site, the County will have responsibility for monitoring and enforcing regulatory issues. A regular inspection process will be employed to ensure that all work is conducted in a manner consistent with applicable building codes and best-practices.

The York County Division of Parks and Recreation will work with the Yorktown Foundation and the Colonial National Historical Park to develop a long-term interpretive/educational program that can be implemented using volunteers augmented by County and Federal staff.

### **The Colonial National Historic Park**

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Representatives from the National Park Service will work with the designers and engineering staff to ensure that the selected design is appropriate to the time period.

The Colonial National Historical Park will assist in the development of scripts and training material for volunteers that will allow them to provide a meaningful and accurate interpretation of the site.

### **Thomas Jefferson National Accelerator Facility**

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Having some of the world's best engineers and scientists, Jefferson Lab will contribute to the effort by assisting in the mechanical, structural and electrical design of '*the mechanism.*' A volunteer engineering team has been identified and will provide design support to ensure that the mill is functional, compliant and safe.

Because this will be a premiere community outreach program, Jefferson Lab's Public Affairs team will work to shine a national spotlight on the project to demonstrate the Lab's commitment to the community in which its employees live and work.

## **Moving Forward**

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The Yorktown Foundation should establish a Windmill Committee and appoint a Chairman who will operate under the authority of the Yorktown Foundation.

A web presence should be established that will allow working documents, progress reports and building and volunteer schedules, to be published for public inspection. Such pages tend to be a significant motivator for fund raising and community support.

Working with the National Park Service the Yorktown Windmill Committee should present the project plans to the County Administrator and the York County Board of Supervisors to identify the location of the proposed mill, the type of mill to be built and how funding will be secured.

Following negotiations with the York County Board of Supervisors and National Park Service, the Yorktown Foundation should determine if the project is feasible and decide when the Yorktown Windmill Committee should proceed.

## Contact Information

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