

THE YORKTOWN WINDMILL PROJECT

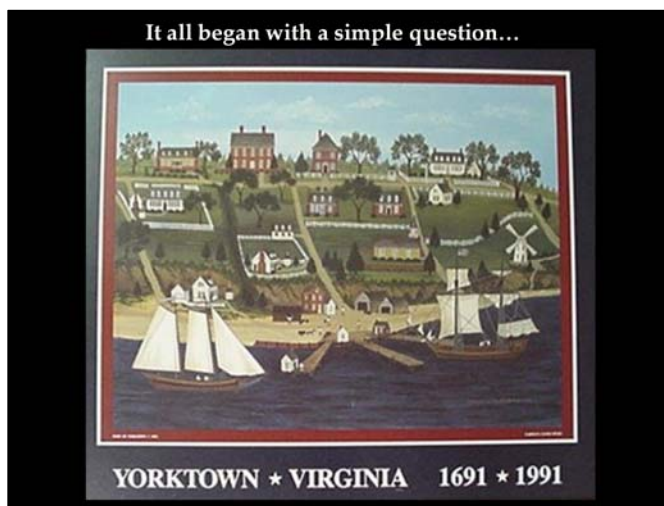
Questions and Answers...



<http://www.yorktown-windmill.org>

Recently there's been a lot of discussion about the Yorktown Windmill reconstruction, the origin of the idea and why the current design and site were selected. The reason I'm here tonight is to clarify these issues and put the National Park Service's support for this project on the public record.

1



As the slide says, this project all began with a simple question. Walt Akers approached me after completing the Fife and Drum Building and finishing his term as President of the Corps and asked, "What next?" We were sitting in my kitchen in the Dudley Diggs house and we turned to this painting of Yorktown.

I asked him, "What's missing from this picture?"

The painting, of course, was created by Carolyn Lloyd Swain for Yorktown's tercentennial in 1991. In the picture you can see the Nelson House, the Diggs House, the Custom House, Swan Tavern and Grace Church – all of which are standing in the village. The Alliance is floating in the river next to the County's new docks. The most notable absence from our town is the Yorktown Windmill which is proudly portrayed at the far right of the painting.

After our talk, Walt approached the Yorktown Foundation and put together a small team to research the historic windmill and to determine the feasibility of rebuilding it.

There were some big questions that had to be resolved...

2

THE YORKTOWN WINDMILL PROJECT

What did the windmill look like?



<http://www.yorktown-windmill.org>

First and foremost, what did the windmill look like.

Since the windmill didn't survive into the age of photography, there are only a handful of drawings, paintings and engravings that show what it may have looked like. All of these images have their advantages and drawbacks from a historical research perspective.

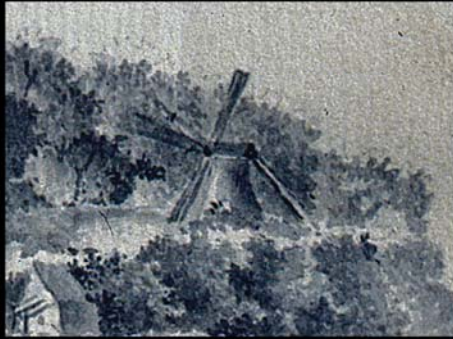
3



A View of the Town of York Virginia from the River
Lt. Thomas Davies of the HMS Success - 1755

The first of these images is a drawing done by Lt. Thomas Davies during a military survey of Yorktown conducted between 1754 and 1756. Davies was a British Naval officer and a trained draughtsman. His drawings were created for military purposes and were done onsite from a ship in the York River. They are considered to be among the most accurate representations from the period.

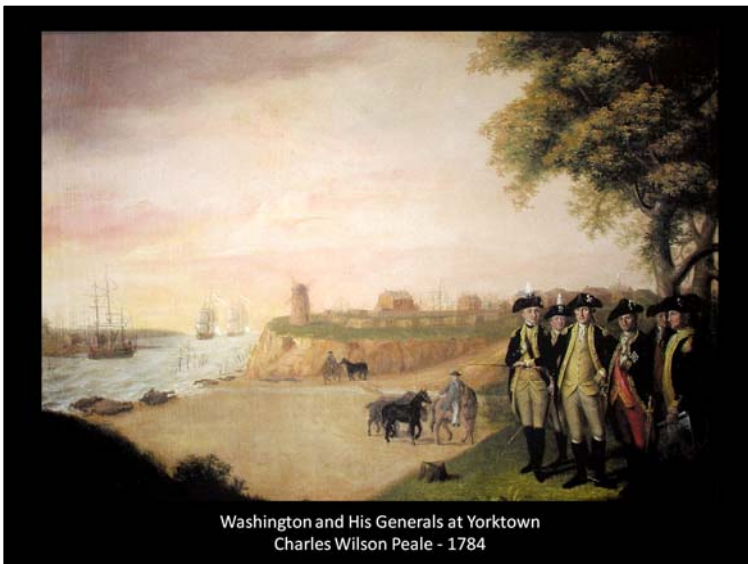
4



Close-up of the Windmill from "A View of the Town of York Virginia from the River"
Lt. Thomas Davies of the HMS Success - 1755

If you look to the far right of Davies' drawing, you'll see the Yorktown Windmill. Again, this drawing was done as Lt. Davies was looking at the windmill --- the importance of this image will become evident in a few minutes.

5



Washington and His Generals at Yorktown
Charles Wilson Peale - 1784

Of the other renderings, perhaps the most famous is this painting attributed to Charles Wilson Peale that was done in 1784. Much has been made of this painting and its depiction of the windmill, but it has to be recognized that neither Charles Peale nor his brother ever came to Yorktown. The windmill and other buildings in the background were included based on maps and, perhaps, first hand accounts - but they are only included as context for the vignette of the generals.

6



A View of Yorktown, From the Old Windmill, as You Approach from Williamsburg
Robert Sears - 1848

This wood carving done by Robert Sears for his 1848 guide book was also based on an earlier rendering that no longer exists, and was not made on site. You'll note that in this carving, the windmill has moved from the east side of Windmill Creek to the west side.

Another interesting factor is the location of the trees and elements in the background of this engraving – when compared with the background of the next painting, it becomes clear that one drawing is taken from the other.

7



Windmill Point: Yorktown, Virginia 1780
Robert Knox Sneden - 1863

Robert Knox Sneden, a Private in the Union Army, served in Yorktown during the Civil War. In addition to many maps of the region, he also produced several water color paintings after the war. This painting is a portrayal of what Yorktown *would have* looked like in 1780 and is most likely drawn from the earlier work by Sears.

Again, the windmill is located on the west side of windmill creek – which raises a very important question.

8

THE YORKTOWN WINDMILL PROJECT

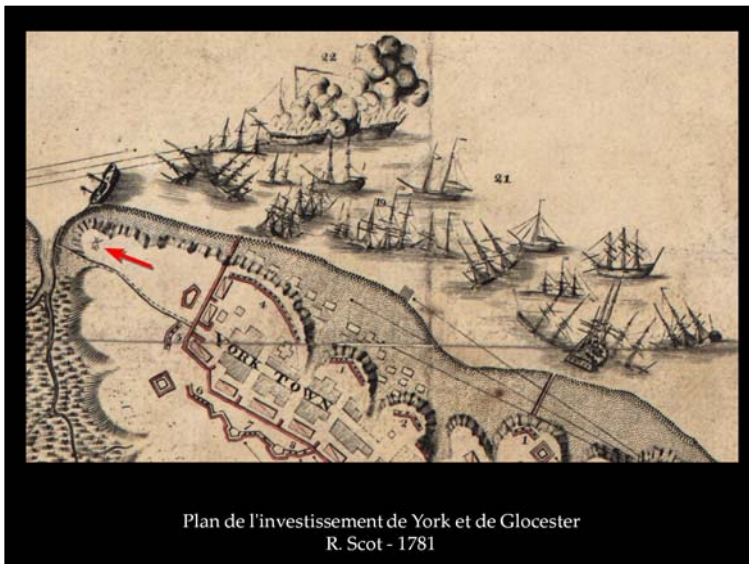
Where *was* the windmill located?



<http://www.yorktown-windmill.org>

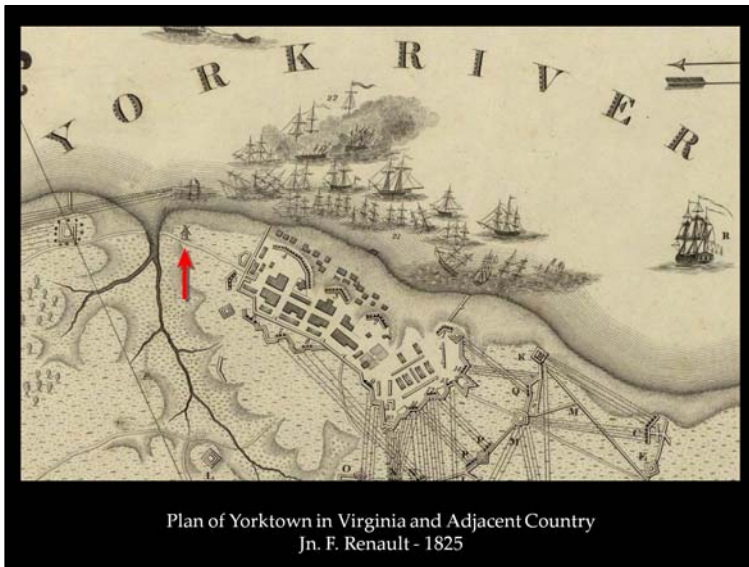
The paintings that we've looked at show several placements for the mill, in order to resolve its true location – you have to examine the maps from the period.

9



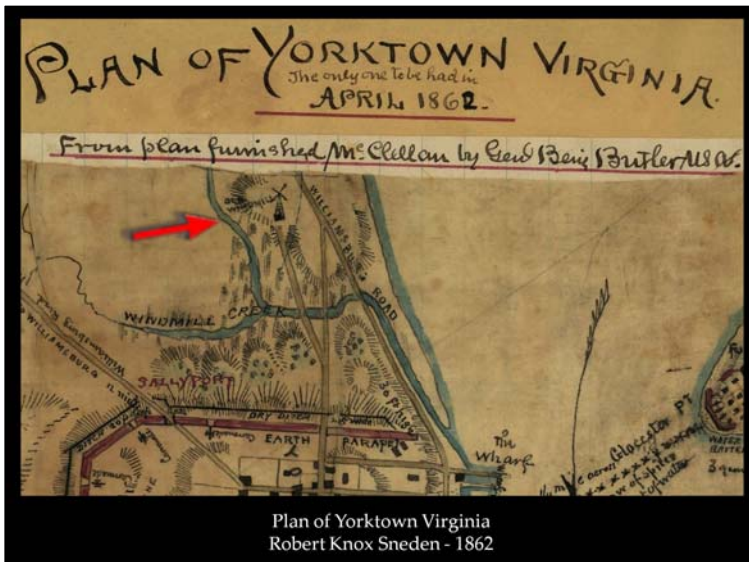
In this French map from the Siege of Yorktown, the Windmill is shown in its traditional location known as Windmill Point – on the east side of Windmill Creek.

10



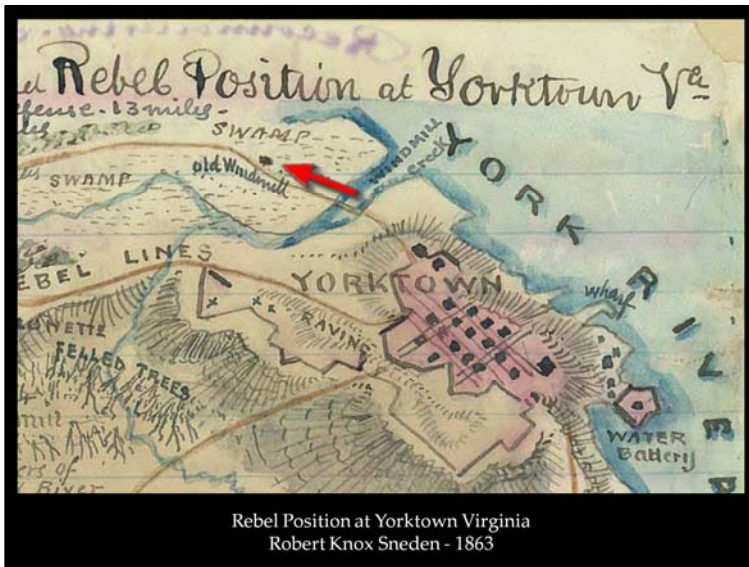
Similarly, a map from 1825 also shows the windmill in the same location.

11



When we come to the maps of the Civil War, however, the placement of the windmill changes dramatically. In this map created by Private Sneden in 1863 the windmill is shown on the west side of Windmill Creek.

12




The placement of the windmill on the west side of Windmill Creek is repeated in this Civil War map as well. Based on this information, one can conclude that there were either two windmills in Yorktown during its history – or, less likely, that the windmill was physically moved from one side of the creek to the other.

Based on these factors, the only image of the windmill that can be considered an accurate representation of the *first* Yorktown Windmill – is the one created by Lt. Davies in 1755. Knowing this, the next question is:

13

THE YORKTOWN WINDMILL PROJECT

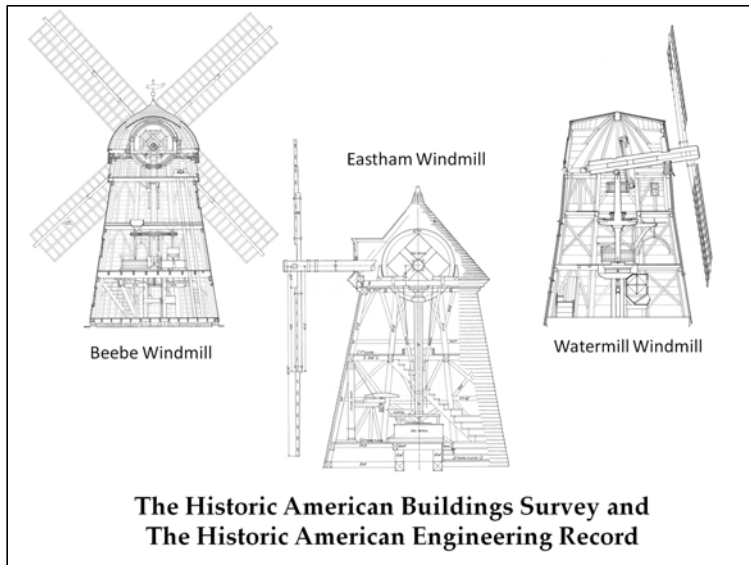
Where did the design come from?



<http://www.yorktown-windmill.org>

How do you develop a design for a building that has been missing for more than 100 years with the limited information that is available.

14



First and foremost, the windmill's design was drawn from the Historic American Building Survey and the Historic American Engineering Record – both conducted by the National Park Service, U.S. Department of the Interior to document the features of surviving windmills from the period. These drawings and their supporting documentation are available from the Library of Congress.

After studying this information, it was necessary to take a closer look and fill in the blanks for some features that weren't fully explained in the drawings.

15



To do this, a site visit to 12 surviving smock windmills in New England was conducting in April of 2008. During this tour the mechanisms, materials and construction techniques of each mill was inspected on site and recorded.

Of the windmills studied (based on its age, size and overall design) the Eastham Windmill in Cape Cod, Massachusetts was selected as the basis for the Yorktown Windmill's design.

16



These renderings show the design of the windmill that emerged from the research. It is a marriage of paintings, historic records and surviving structures with minimal conjecture.

17



Having said that, a picture is worth a thousand words. In this one view you can see the 1755 drawing of the windmill juxtaposed with the Eastham Windmill and the reconstructed Yorktown Windmill. As you can see, the similarities flow through the drawings and the most notable change that was made in the final design was the use of plank siding rather than cedar shingles.

The change in building materials was justified because the use of shingle siding was not prevalent in the southeastern United States at the time.

18

THE YORKTOWN WINDMILL PROJECT

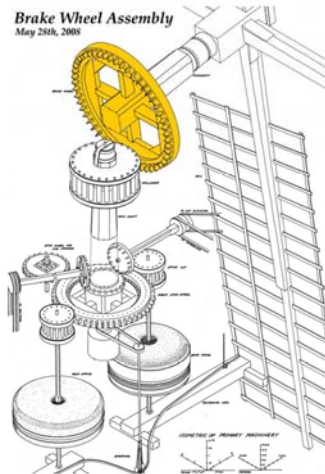
How were the gears and windmill constructed?



<http://www.yorktown-windmill.org>

After completing the historical research, over a period of three years the gears and windmill were constructed. In developing the plan for reconstructing the Yorktown Windmill, everyone involved agreed that its true educational value was in the gear system and internal mechanisms.

19



Gear design and vane structure taken from drawings from the Historic American Engineering Record.

To design the mechanical system, the Historic American Engineering Record was reviewed and interviews were conducted with the operator's of the surviving New England windmills. Particular attention was given to the windmill at Eastham, Massachusetts – a fully intact windmill from the period.

20



Using large teams of volunteers, the gear system was built first. While this may seem counterintuitive, it was agreed that if the team could not build an operable windmill gear system then the exhibit would probably not be worth doing.

21



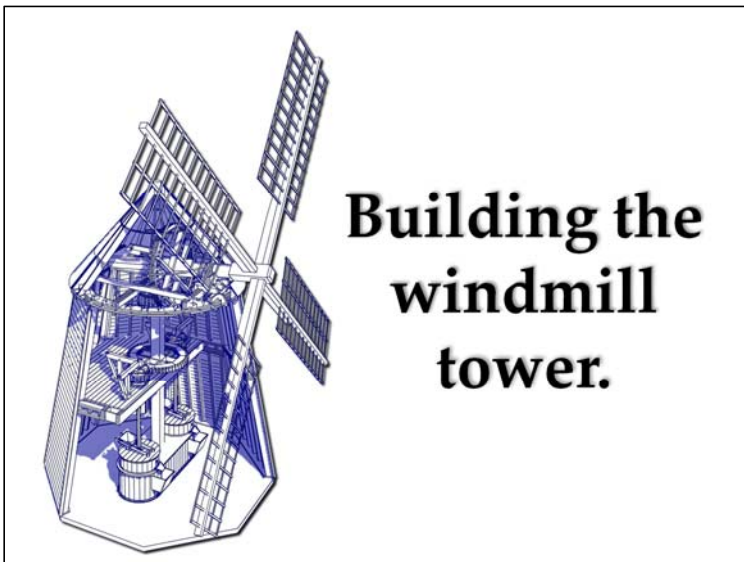
In addition to Boy Scouts from Seaford Troop 123, Congressman Rob Wittman and I participated in assembling the largest of the windmill gears at the Yorktown Visitor Center on May 28th, 2008.

22



In the weeks that followed all of the primary gears for the Yorktown Windmill were completed and the fully operational gear train was first displayed in Yorktown on July 4th of 2008.

23



Following the construction of the gear train, the next step was to design the body of the windmill. The preliminary design was submitted to the Historic Yorktown Design Committee who approved it on January 13th, 2009. At this time the Watermen's Museum site was the only location that was proposed for the reconstruction and it was approved unanimously.

24



During the next two years, the windmill was constructed by more than 100 volunteers working at a workshop in Seaford, Virginia. The building design and placement was reviewed under the Commercial Building Code of the Commonwealth of Virginia and approved by the York County Development Authority.

25



After construction, the windmill sat in sections at its Seaford location while plans were made for installation. During this time further site evaluations were conducted to determine the best possible site for the exhibit. Unfortunately, the evaluation process was complicated and delayed by actions of a citizen in the village – effectively eliminating the possibility of the windmill being installed on National Park Service property in time for the 300th Anniversary.

As a result the Watermen's Museum site was revisited, and with the continued support of Executive Director David Neibuhr, was again recognized to be an excellent fit for the project.

26



In late August the foundation for the windmill was installed and the exhibit was fully assembled for the first time on September 30th, 2011.

27



The movement of the massive gears and shafts was performed with a crane, but the fit and placement of each component had to be done by hand.

28



In this picture, the free floating cap can be seen. Once installed, the cap was internally chained to the body of the windmill to prevent wind damage.

29



Here you can see most of the components that comprise the windmill's gear train. On the two gears that are visible there are 104 removable teeth, and there are another 56 teeth in the gears that aren't shown here.

Based on this design the millstones will turn 7 times for each rotation of the vanes.

30



Here is a photo that ran in the Daily Press on Yorktown Day showing Walt in front of the completed windmill.

31



The Yorktown Windmill was dedicated on Yorktown Day, October 19th, 2011 – 300 years after the construction of Buckner's original mill. The completed windmill is fully ADA compliant as required by Virginia Code and is fully accessible to visitors.

32

THE YORKTOWN WINDMILL PROJECT

Why was the original site not used?



<http://www.yorktown-windmill.org>

The final question that has been asked repeatedly is, “why was the original site not used”. There are a number of very significant reasons why the original site was not a good fit for this project.

33

THE YORKTOWN WINDMILL PROJECT

<http://www.yorktown-windmill.org>



- Lack of Accessibility for Construction and Visitors
(including ADA requirements)
- Prohibitions of Building on Archaeological Site
 - Secretary of the Interiors Guidelines
 - State Historic Preservation Office Requirements
- Natural Resource Concerns
 - Tree removal
 - Erosion of steep banks after removal of vegetation
- Vandalism
- Interference with Local Residents

First and foremost, accessibility to the original site is limited. Construction at the site would have been hampered because of its location and visitors, particularly the physically handicapped, would not have been able to reach it.

The Secretary of Interior also has significant restrictions on performing construction on an archeological site, these restrictions are echoed in the policies of the State Historic Preservation Office.

Additionally, there were many natural resource concerns. In order for the mill to be seen in a proper setting the trees would need to be removed from the hill. Because the bluff has

already been cut-away to make way for roads on either side, this would lead to increased erosion and, eventually, the loss of the hill itself.

As with other remote areas, it would be difficult to ensure the security of the site and vandalism would be an ongoing concern.

Finally, constructing the mill and creating an access road to it would almost certainly have a negative impact on local residents that live near there.

Fortunately, the Watermen’s Museum location suffered none of these concerns and the Watermen’s Museum, as part of the Chesapeake Bay Gateway Network and Water Trails System, is fully affiliated with the National Park Service – making the program mutually beneficial to both the museum and the Park Service.

34



THE YORKTOWN WINDMILL

"Miss Evelyn"

October 19th, 2011

Built by volunteers to celebrate America's innovative past and to inspire the engineers of our future...

"Pursue greatness."
Walt Akers, Millwright

VOLUNTEERS

Daniel Akers Madeleine Akers Dave Albright Christian Allen Willis Berkshire Andy Bowers Ben Bowers C.A. Barn Contractor, Inc. Angie Brock Melinda Burgess Chris Cable Diamond Jim Camilleri Kat Camilleri Randee Carter Andrew Castle Dave Chappard Mike Dallas Russ Davenport Abbie Dwyer Owen Dwyer	Mark Fahnest Brendan Fisher Lynn Gault Nellie Gault Dean Golembewski Marlene Golembewski Cody Gregory Dan Gregory Katherine Gregory Joanna Griffin Ed Guy Hampton Roads Crane Ethan Hartman Randy Hartman Scott Hartman John Hanksrecht Paul Hill Hunter Hobbs George Hitchak Jeff Hyatt	Stephen Ingalls Bernie Karwac Jerry Karwac John Lancher Lee Latimer Bridget Lindsay Mike Littner Zake Maskel Troy Mathis Beth McIsner Rob Meisner Charles E. Newbaker, III Dave Niebuhr Lois Niebuhr James Obermayer John Oppenhuizen Nuel Okay David Parkles Bill Pope Paul Powers	Rappahannock Concrete Thomas Renzo Sid Rickards Bill Riter Bryce Ryeyston Keith Ryeyston Reagan Ryeyston Joe Schumacher Cody Smith Karen Smith Dax Smith Christine Stettler Larry Snyder Ryan Snyder Billy Spragle Rusty Spruue Cameron Sterling Suzanne Stensale Marty Trandale Celine Thompson	Dan Truhe Ben Tyner Scott Tyner Wyatt Venneman Joshua Walker Hilma Walter Mark Warner Candyn Wreckley Chris Wellman Patrick White Don Wiggins Cody Williams Rob Wittman William Wray Larry Wright Brian Wroten Steve Young Walt Zarnesha Evelyn Akers Walt Akers
--	---	--	---	---

ORGANIZATIONS


The Twisted Oaks Foundation Seaford Troop 123 - Boy Scouts of America The Watermen's Museum	The Yorktown Foundation Colonial National Historical Park Thomas Jefferson National Accelerator Facility	The Yorktown Rotary Club York County Historical Museum
---	--	---

In closing I'd like to take a moment to show the plaque listing the names of all the volunteers and organizations that supported this project with their time and talent. The plaque will be installed on the wall inside the windmill so future visitors will know that this was, above all, a volunteer effort.

35

THE YORKTOWN WINDMILL PROJECT

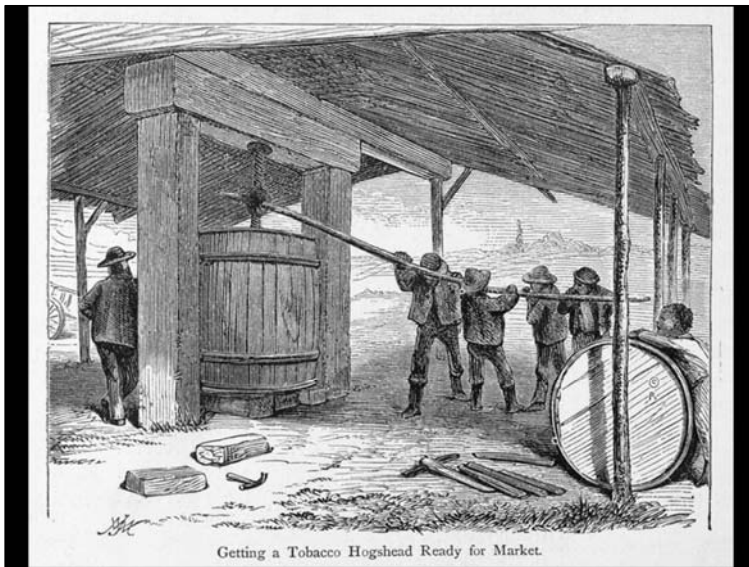
What is next?



<http://www.yorktown-windmill.org>

Finally, one of the questions that was asked in the last Board of Supervisor's meeting was, "what is the next project that will be undertaken in this community". Today, I am pleased to announce that working in conjunction with the National Park Service and the Watermen's Museum, Walt Akers is developing a team of volunteers to research, design and build this...

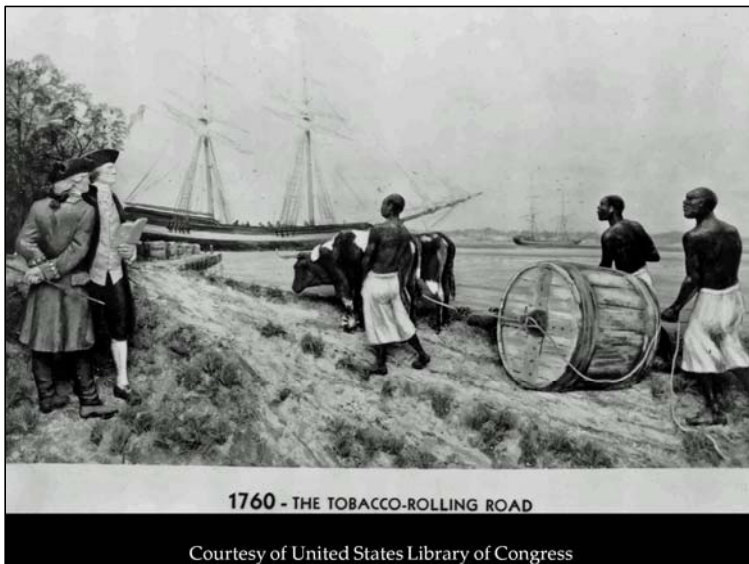
36



... a colonial tobacco press and hogshead.

You're probably not aware, but this device was instrumental in the preparation of tobacco for shipping, either by land or sea. As you can see from the image, manpower was an essential element of operating the press. This exhibit, which is expected to be installed at the Archer Cottage in Yorktown, is part of an emerging study of both historic commerce and labor.

37



As an upcoming report from the park will discuss, nearly 70% of all slaves sold in Virginia arrived in Yorktown on William Nelson's pier and were marched up the "great valley" where they were sold at public auction – **in front of the predecessor to the building we are in tonight.**

38



All of this information, the supporting research and more is located at the Yorktown Windmill Project's website.

Thank you for your attention and I'd be pleased to answer any questions you might have.