City of Alexandria, Virginia

Historic Ship Timbers Stabilization Project

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Alexandria Archaeology
March 2022
African American Heritage Trail
North Waterfront Route from the Foot of King Street

Alexandria Archaeological Commission
America's First Archaeological Commission
Outline

1) Overview of Historic Alexandria/Alexandria Archaeology
2) Background on Waterfront Archaeology Excavations
3) Update on Ship from Hotel Indigo Site
4) Waterfront Museum Feasibility Study
5) Update on Ships from Robinson Terminal South Site
6) Historic Ship Timbers Stabilization Update
7) Next Steps
8) Contact Information
Office of Historic Alexandria
Alexandria Archaeology
Established 1984

- Alexandria Archaeology is a division of Historic Alexandria
- Museum on the 3rd floor of the Torpedo Factory – also serves as classroom and lab
- Supported by the AAC and FOAA
Alexandria’s Historic Waterfront

Modern Shoreline

Hotel Indigo Site
44AX229

Robinson Terminal South Site
44AX235
Ship from the Hotel Indigo Site
Alexandria Waterfront Small Area Plan
Alexandria Waterfront History Plan

• “identifying locations for a history center and other cultural anchors”
• “establishing a Southern Cultural Anchor and History Center in the waterfront area”
• “commission study of best location for Archaeology Museum/History Center”

Background
Draft Components: Museum Feasibility Study

- Distill Existing Planning Documents
- Engage Stakeholders including Commissions
- Develop Building Requirements (Uses/Size)
- Analyze Potential Locations and Alternatives (New Construction, Existing Buildings, Storage Facilities)
- Measure Area/Visitor Demographics
- Explore Educational Opportunities and Partnerships
- Sustainability, Business, Funding Model
- Capital Cost Projections
- Make Recommendations
Update: Three 18th-Century Ships
Robinson Terminal South Site

- 3 ships and a 15’ section of wharf; 1000+ timbers
- Warehouse in 9 pools of water
Update: Three 18th-Century Ships
Robinson Terminal South Site

Phase 1 (Ongoing since FY19)
Stabilization – In wet-storage at Bus Barn

Phase 2 (FY20)
Documentation – 3D laser scanning and modeling

Phase 3 (Spring 2022)
Storage and Selective Conservation – With the goal to preserve the timbers, free from damage or decay
Update: Three 18th-Century Ships
Robinson Terminal South Site

3D Laser Scanning Ship Timbers
Phase 3 Storage and Selective Conservation – Options

1) Storage

2) Conservation
### Historic Ship Timbers Stabilization

#### Phase 3 – Storage

**Options Considered**

Team assessed specific options for these alternatives:

- OHA, DPI, TES, Parks and Rec, GS

<table>
<thead>
<tr>
<th>Type of Storage or Next Step</th>
<th>Locations</th>
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<tbody>
<tr>
<td>Submerging in Pond Storage</td>
<td>Ben Brenman Pond</td>
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<tr>
<td></td>
<td>Lake Cook</td>
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<tr>
<td></td>
<td>Windmill Hill Park</td>
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<tr>
<td>Rebury Underground Storage</td>
<td>Four Mile Run Park</td>
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<td></td>
<td>Hensley Park</td>
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<tr>
<td>Continued Tank Storage</td>
<td>Victory Center Parking Lot</td>
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<td></td>
<td>Commercial Warehouse</td>
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<tr>
<td>Full Conservation</td>
<td>Climate-controlled Storage or Exhibition</td>
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Height 20 Ship Timbers Stabilization

Phase 3 – Storage

- Ben Brenman Pond: **Medium-term storage** option that preserves the possibility of future study and/or conservation

  - Ease of access
  - Potential damage to artifacts can be preemptively mitigated and monitored
  - Low likelihood to affect water quality
  - Lower long-term cost
  - Less City-resource intensive
Historic Ship Timbers Stabilization

- Funding allocated in FY21 CIP Budget
- Contract awarded to AECOM December 2021
Immediate Next Steps
• Development of Project Schedule
• Work to begin in April and last about 2 months

Future Steps
• Site interpretation
• Implement monitoring schedule
• Reassessment in 20 years
Historic Ship Timbers Stabilization – Interpretation

Ship Ponding Interpretive Sign Locations
Ben Brenman Park
Excavating Historic Ships

Archaeologists excavated four ship hull remnants along the Alexandria waterfront - one from the Hotel Indigo Site (44AX229) and three from the Robinson Landing Site (44AX235). Over 200 years ago, Alexandrians repurposed these old merchant ships to create new land along the Potomac River.

An Underground Fleet

In 2018, archaeologists working at the Robinson Landing Site (44AX235) discovered the remains of three historic ship remnants in the ground. These historic ships provide important information about life in the early Alexandria port.

Under the City’s Archaeological Protection Code, archaeologists recover and preserve what would have otherwise been lost to development.

Thunderbird Archaeology, contracted by developers EYA and Carr Properties, found the four ship remnants ahead of construction. This partnership between archaeologists and the public helps discover the city’s collective past.

Moving Giant Timbers

The remnants of the wooden vessels ranged from 50 feet to 80 feet in length. Once they were uncovered, the wood was kept wet to keep it from cracking. Archaeologists photographed the ships and mapped them in place. Each timber was labeled before being removed.

Underground parking garages now take the place of the ships, but the information they hold about the past is preserved forever.

The Changing Waterfront

Early Alexandria’s shoreline looked much different than it does today. Free and enslaved laborers working for waterfront landowners created land and reach the deep water of the Potomac River, allowing ships to dock. Wooden structures held this new land in place. Some of these wooden structures included derricks and merchant ships, like those now stored in Ben Brennan pond.

Historic map evidence suggests that the two southernmost ships from the Robinson Landing Site became part of this new land between 1758 and 1845. The two northernmost ships, including the one from the Hotel Indigo Site, were buried between 1748 and 1798.

How do ships become land?

Reusing old ships to create new land was a common practice in the 18th and early 19th centuries. Cities like Boston, New York, Seattle, and San Francisco all used abandoned and abandoned ships in this way.

Alexandria’s shallow bays were filled in with soil, cobbles, and trash. This fill was held in place by a series of structural walls that kept them from eroding into the Potomac. Rock walls were used in cities with easy access to stone, and wood was used when lumber was more available. In Alexandria and many other cities, ships that had reached the end of their sailing lives were in the perfect position to be reused as part of the land-making structures.

Before right: digital models of the ships from the Robinson Landing and Hotel Indigo sites.
Reconstructing the Past

Archaeologists excavated four ship hull remnants along the Alexandria waterfront - one from the Hotel Indigo Site (44AX229) and three from the Robinson Landing Site (44AX235). Over 200 years ago, Alexandrians repurposed these old merchant ships to create new land along the Potomac River.

Documentation in situ
Excavation is a destructive process. Once an object is taken out of the ground, it cannot be put back again. The job of an archaeologist is to find documentation in situ so that each object’s location and context is not lost after excavation.

Wood Tells a Story
Most trees create a new layer of growth each year. These growth rings vary in thickness depending on the weather. Patterns of thick and thin rings can show where and when a tree was alive before being cut down to use as lumber. dendrochronology dates wood by comparing the tree ring sequences of unknown samples, like the trees’ wood, to known tree ring sequences.

Samples from each ship were taken and compared with the growth rings of trees from around the world. The Hotel Indigo Ship (44AX229, Feature 53) samples show that its timbers came from Massachusetts sometime after 1741. Samples from the three Robinson Landing Site ships were not conclusive.

Digging into Documents
The names of each ship remain a mystery. Researchers studied the size and shape of the recovered vessels and compared them to documents showing similar ships arriving and departing from Alexandria. Local newspapers, customs records, ship registration forms, logbooks, maps, and property records are all useful sources to learn more about historic ships of this time. These documents helped show what cargo the merchant ships may have carried and what places they may have traveled.

In the late 18th century, Alexandria was a trading partner with the United Kingdom, Germany, France, Italy, Spain, the Caribbean, and ports along the east coast of North America. While newspaper records do not identify ships trading directly between Alexandria and the African continent, Alexandrians were involved in, and heavily profited from, the trade of enslaved people.

What were the ships used for?
The flat floors and full shape of the ship hulls allowed these merchant ships to carry cargo. By the late 18th century, the Potomac River connected the bustling port city to the world.

Alexandria mainly exported raw goods like tobacco and wheat, and imported manufactured goods from Europe and sugar from the Caribbean. The forced labor and the trade of enslaved individuals formed the foundation of this trans-Atlantic network.

Digitally Rebuilding the Ships
Researchers used historic research and archaeological documentation to reconstruct the archaeologically recovered ship remnants.

The Conservation Research Laboratory (CRL) at Texas A&M University and Alexandria Archaeology used handheld laser scanners to create digital models of each timber. These scans were combined in a 3D modeling program to reconstruct a digital model of the ship. Missing sections were extrapolated based on historical research to show what the ship and vessels would have looked like.

What is the ship used for?
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Each ship timber was laser scanned (top left), reconstructed digitally, and 3D printed to create a model (bottom left). Credit: Texas A&M University Conservation Research Lab.
Historic Ship Timbers Stabilization – Interpretation

Ponding and Preservation

Archaeologists excavated four ship hull remnants along the Alexandria waterfront - one from the Hotel Indigo Site (44AX229) and three from the Robinson Landing Site (44AX235). Over 200 years ago, Alexandrians repurposed these old merchant ships to create new land along the Potomac River.

Caring for Waterlogged Wood
Waterlogged wood poses serious preservation challenges. These objects keep their shape and structural integrity if they remain wet. If they dry without conservation, the wood will warp, shrink, and crack.

The Preservation Journey
The ship from the Hotel Indigo Site was stored in water before being sent to Texas A&M University for conservation. The three remaining ship remnants from the Robinson Landing Site embarked on a different stabilization journey: preservation in Ben Brennan Pond.

Where did the ships go?
The four ship hull remnants are on different stabilization journeys. The ship from the Hotel Indigo Site was conserved, and the three ships from the Robinson Landing Site were pressed. Conservation and preservation both slow the deterioration of an object, but they aren’t the same process.

<table>
<thead>
<tr>
<th>Conservation</th>
<th>Preservation</th>
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<tbody>
<tr>
<td>Ships</td>
<td>Hotel Indigo Ship (44AX229, Feature 53)</td>
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<tr>
<td>Method</td>
<td>Mechanical and chemical alteration; iron is removed, water in the wood is replaced with a waxy substance, and the wood is freeze dried</td>
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<tr>
<td>Goals</td>
<td>Timbers are stable and can be stored, studied, and exhibited without keeping them wet</td>
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Alexandria Archaeology regularly monitors these important artifacts, ensuring that they have not shifted or deteriorated. Divers dive on the timbers every 5 years to preserve the possibility of future study and conservation.
Historic Ship Timbers Stabilization

For More Information, visit:

Historic Ship Stabilization: Ship Ponding

Questions, Comments, Feedback?

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