

Help Us Finish Restoration & Open The Tower!



Opening Tower #3 to the general public will promote Tourism, Interpretive Educational Programs and Social Events within Delaware State Parks and Coastal Delaware. Visit restorethetower.org.



DELAWARE STATE PARKS
YOUR OUTDOOR ADVENTURE STARTS HERE



We Need Your Help!

Join the Delaware Seashore Preservation Foundation, The Fort Miles Historical Association and Delaware State Parks in the restoration of World War II Artillery Fire Control Tower #3 located within the Delaware Seashore State Park on Route One just south of Dewey Beach.

The Delaware Seashore Preservation Foundation and the Fort Miles Historical Association in partnership with Delaware State Parks have made significant progress because of the generosity of numerous donors including:

- Longwood Foundation
- Crystal Trust Foundation
- Marmot Foundation
- Welfare Foundation
- First Shore Bank
- Fulton Bank
- Community Foundation
- Focus Multisports/
Coastal Delaware Running Festival
- Laffey McHugh Foundation
- Creative Resource Group
- State of Delaware through the Bond Bill
- Veterans Administration for Delaware
- Many small businesses and individuals



According to the Delaware Department of Transportation's statistics, over 5 million vehicles pass by this site annually!



The Delaware Seashore Preservation Foundation is a non-profit Friends organization created to preserve, protect and enhance the Indian River Life Saving Station, and the Parks within the Delaware Seashore State Park Region including the Indian River Marina, Delaware Seashore, Fenwick Island and Holts Landing State Parks.

➤ Visit dspf.net • Tax ID # 51-0372783

The Fort Miles Historical Association is a nonprofit group that has as its mission to preserve, protect and defend all aspects of Fort Miles working with community and state stakeholders and other interested parties. The FMHA also has its goal to work as an active partner with the State of Delaware to develop the historical potential of Fort Miles.

➤ Visit fmha.org

The Division of Parks and Recreation provides Delaware's residents and visitors with safe and enjoyable recreational opportunities and open spaces, responsible stewardship of the lands and the cultural and natural resources that we have been entrusted to protect and manage, and resource-based interpretive and educational services.

➤ Visit destateparks.com

Help Us Complete The Project!

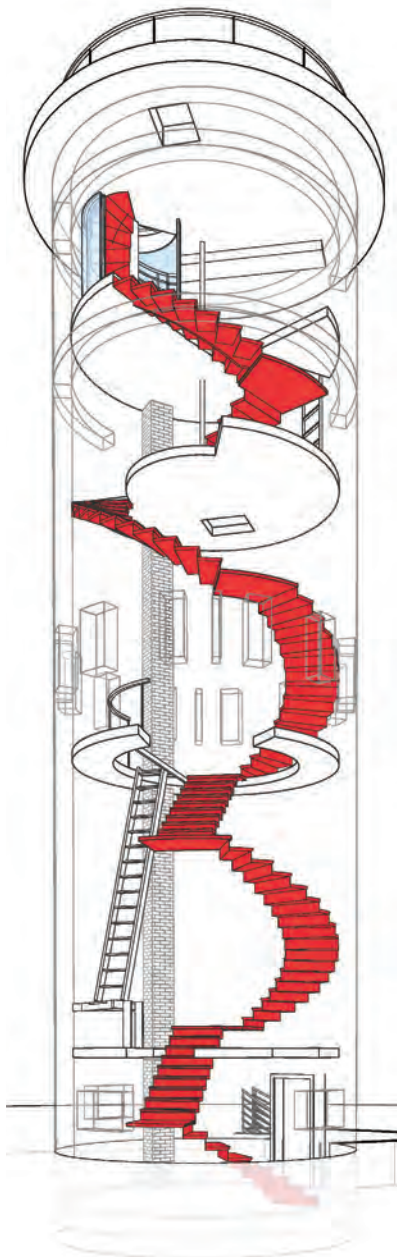
TOWER 3 RESTORATION PROJECT COST \$1,190,000

FUNDS NEEDED \$225,000

For more information, please contact:

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Fire Control Tower #3 Restoration Project Budget



Proposed Engineering Rendering

PHASE 1 - PROJECT FEASIBILITY [COMPLETED]

Includes Feasibility Study, Tower Structural Analysis, Conceptual Design, Budgetary Estimate and Drainage Study

PHASE 2 - OPEN THE TOWER & EXTERIOR TOWER LIGHTING [COMPLETED]

Includes Tower Clean-up & Signs, Entrance Door & Walkways and Tower Lighting

PHASE 3 - EXTERIOR REPAIRS, TOWER ENTRANCE, SITE WORK & ENGINEERING DESIGN [COMPLETION JAN 2021]

Includes Detailed Construction Documents & RFQ Package, Exterior Concrete Repairs, Excavation & Ramps, Permanent Door, Storm Water Drainage System, and Tower Electrical Service

PHASE 4 - INTERNAL RENOVATIONS & INTERIOR STAIRWAY [PARTIALLY FUNDED]

Includes Modifications to Accommodate Stairs, Interior Concrete Repairs, Stainless Steel Stair System, Windows & Ventilation System, and Lighting & Security System

PHASE 5 - ROOF TOP OBSERVATION DECK, DISPLAYS & PUBLIC OPENING [FUNDING NEEDED]

Includes Roof Repairs & Weatherproof Membrane, Roof Guard Rails, Roof Access Staircase, Interior Paint & Finishes, and Interpretive Displays

CONTINGENCY, PHASES 3, 4 & 5 (10%) Design & Construction Contingency

TOTAL PROJECT PROJECTED COST

\$1,190,000*

FUNDS NEEDED TO COMPLETE

\$225,000**

**Delaware State Parks matching our \$225,000

*HMR Budgetary Estimates. Subject to Change.

Built from 1939 to 1942, the 11 concrete observation towers along Delaware's coast were built to protect the shores during World War II—and to last about 20 years. They are still standing after 60 years. The towers were the eyes for the guns of Fort Miles, located in what is now Cape Henlopen State Park. Abandoned since the early 1960s, these sentinels once stood guard against German ships.

About the Tower

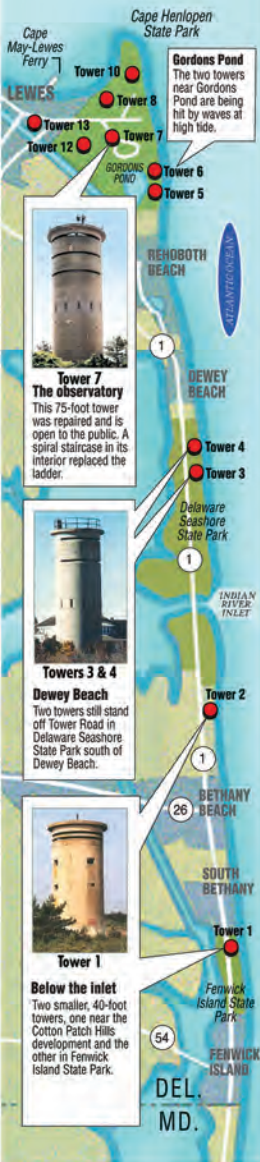
As war was raging in Europe, the United States saw the need to protect the coast from Nazi naval threats. Delaware Bay was of prime concern. The army quickly built Fort Miles in two years at Cape Henlopen to protect the industrialized and shipbuilding cities of Wilmington and Philadelphia. Fort DuPont and Fort Delaware near Delaware City, and Fort Mott in New Jersey were thought to be too far up the river to be a viable defense.

The observation towers along Delaware's coast were part of the overall defense of the coast. They were the spotters for two 16-inch guns, two 12-inch guns and four 6-inch guns at Fort Miles. An underwater minefield was also set up from Cape Henlopen to Cape May. Each mine could be turned off electronically to allow friendly ships to pass.



Tower locations

Thirteen observation towers were built to protect the entrance to Delaware Bay. Eleven are along Delaware beaches from Fenwick Island to Cape Henlopen. Two towers, numbers 9 and 11, are located near Cape May, New Jersey. Tower 7 in Cape Henlopen State Park has been renovated.



Observation deck

The steel railings are still intact on most of the towers. Wooden railings on some have since collapsed or been taken down.



The number of observation slits varies from tower to tower, from one opening on the smallest structures to three on the tallest ones. They provide a 270° view of the beach and ocean around the tower.

The reader and observer plot coordinates.

Spotting

Observer with azimuth range finder



Observation

Towers were equipped with various optical instruments for acquiring and observing targets.

The most common was the azimuth sighting range finder. The range finder were mounted on concrete columns inside the towers positioned to see through the tower's slits. These scopes were used to determine the position of a target. An azimuth is a measure along the horizon of the angle between an object and a reference point. An observer and a reader worked together to determine the azimuth of a target. The coordinates obtained with the scope were sent to a base station bunker or a gun battery (see "Triangulation" below).

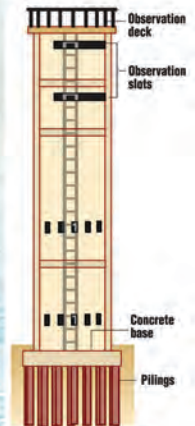
Inside

Soldiers climbed a ladder through the center of the tower that reached all the way to the top. At the time, the towers were equipped with wooden floors and glass windows. After 60 years, only the concrete remains. The towers were heated in winter. Each floor was large enough to hold four to six men comfortably.

Dimensions

- Height: Ranges from 39-75 feet
- Diameter: 16 feet
- Walls: 1 foot thick
- Built: Continuous-flow concrete structure
- Heat: 440-volt electric heaters
- Cost: Tower 12 cost \$29,500 to build

The towers range in height from about 39 feet near Fenwick Island to the 75-foot observation tower open to the public at Cape Henlopen State Park.



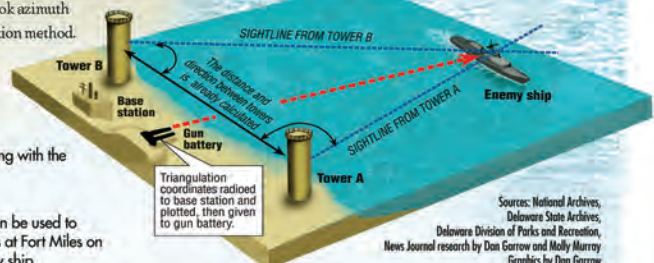
Construction

The foundation is a series of 14 creosote-coated pilings that were hammered into the sand. A concrete base was laid on top and then the tower was built. They are constructed from reinforced concrete. Wire mesh and steel reinforcing bars were used for strengthening. Concrete was poured into a form in a continuous stream, which took about 24 hours to complete. Although built to last only 20 years, the towers still stand after 60.

Triangulation: Targeting the enemy

Contrary to popular belief, the towers were not built to shoot German ships and submarines but to sight enemy warships off the coast. They were not equipped with weapons. The towers were built at specific sites and the distances between them determined. Once a ship was sighted, observers took azimuth readings every 30 seconds and relied on a simple math triangulation method.

- 1 Once a ship was sighted, in this case by **Tower A** and **Tower B**, the coordinates of their sightlines were telephoned to the battery commander station.
- 2 The battery commander station plotted the coordinates along with the known base-line distance between the two towers.
- 3 Together, the three lines created a triangle, which could then be used to determine the angle and direction of artillery fire. The guns at Fort Miles on Cape Henlopen were never called upon to fire at an enemy ship.



Sources: National Archives, Delaware State Archives, Delaware Division of Parks and Recreation, News Journal research by Dan Garrow and Molly Murray Graphics by Dan Garrow



The News Journal
www.delawareonline.com