

Feature

Retreating Through History

Landscape architects preserve and recreate a piece of the 18th-century New England landscape, a living memorial to the starting point of the American Revolution.

By Heather Hammatt, ASLA

On the 19th of April in 1775, a group of Yankee farmers stood their ground against England's heavy-handed rule, defying taxation without representation and the violence with which agents of the crown reprimanded any shows of independence. As history tells, on Lexington Green the "shot heard round the world" began the conflict. But it was the events that took place before and after that fateful shot, over 20 miles of country road connecting the port city of Boston with a series of small, outlying colonial towns, that united the colonists and ignited the American Revolution.

As Paul Revere made his famous midnight ride, approximately 700 British troops crossed the Charles River and marched toward Concord, ordered to destroy the rebels' military stores. A disorganized confrontation on Lexington Green began a day of conflict that would range to the North Bridge at Concord, where the British would meet a more organized colonial militia. With the British retreat from Concord to Boston the real battle began. Colonial militia and Minutemen flanked what is now known as "Battle Road," hounding the retreating British column back to Boston Harbor.

To preserve a piece of that cultural landscape, Congress created the Minute Man National Historical Park in 1959. The area's historic structures and farm fields were in danger of disappearing as rapid economic growth brought a rise in commercial and suburban development. Most of the hallowed 20 miles is now buried under the city of Boston and its suburban sprawl of communities and conveniences. Parts of the original "battle road" are now incorporated into Route 2A, a Massachusetts state highway.

Through the efforts of the National Park Service (NPS), which spent much of the 1960s through the 1980s consolidating land and resources, segments of the original road and several witness structures have been preserved and are being brought back to their 1775 appearance as the Battle Road Trail, a 5.5-mile pedestrian and bicycle trail that runs through the Minute Man National Historical Park. The master plan and design for Battle Road Trail, created by Carol R. Johnson Associates (CRJA) in conjunction with the NPS, is universally accessible for all 5.5 miles, even though it has a 110-foot grade change and crosses seven wetland areas and a four-lane state highway. The final product, a combination of historic preservation and modern materials, won a 2001 ASLA Award for Design. According to the jury, "the design is nondisruptive of contemporary life but [designed] to be used by contemporary people."

Prior to the late-1990s master plan for Battle Road Trail, the Minute Man National Historical Park was essentially a drive-by park. According to Nancy Nelson, park superintendent, the park's 1,000 acres got more than a million visitors each year, few of whom left their automobiles. With five miles of state highway and local roads providing access to a variety of historic sites and witness structures, Battle Road originally functioned as a way to get people from point A to point B through the park, with little or no pedestrian access or interpretation along the way. According to Kyle Zick, project manager for CRJA, with tourists sightseeing rather than watching the road, the existing trail became a safety hazard. "Renovation of the trail allowed us to remove cars from the scene and open up the whole experience for pedestrians and bicyclists," says Zick. Before renovation, successional forest cover, modern architecture, and asphalt obscured almost all of the 18th-century appearance of Battle Road and its adjacent cultural and physical landscape. The NPS hopes, through the ongoing renovation, to bring the landscape surrounding Battle Road Trail back to more of its original character.

The Battle Road Trail project has been designed and constructed through a series of phases. Phase one began with master planning the entire route of the trail on paper and then physically clearing the trail's alignment on site. "John Tauscher [ASLA, landscape architect for the NPS] and others walked through the underbrush with hand tools, clearing a trail," says Zick. According to Tauscher, the first step was for a contractor to walk the site, staking the alignment according to the master plan. "Then I went out into the field and made adjustments based on existing natural and historic features and the desire to enhance or screen views," says Tauscher.

Once the trail was realigned and the automobile access was removed, along with 4,100 linear feet of asphalt, it was necessary to reassess parking needs along the trail. Consolidating as much as possible, lots were created at strategic points and the design of the realigned trail was created with loops that originate and terminate in the parking lots to create a series of short hikes. This allows people to access the trail at various points along its length, experiencing its interpretive elements, without having to walk the entire length and back.

Wetlands have been a feature of the Battle Road landscape since colonial times. According to Zick, the colonists used to ditch and drain the wetlands, to be able to more easily harvest a native wetland plant known as "fresh hay" that they used for animal fodder. Traces of these 18th-century drainage systems can be found in some of the wetland areas along the Battle Road Trail.

The solution was to cross the seven wetlands with more than 900 feet of boardwalk. The boardwalks were constructed as part of phase one. "[Phase one] was scheduled for winter construction. It was easier to obtain permits to construct the boardwalks when the ground was frozen, because there would be less disturbance to the wetland areas," says Zick.

Environmentally friendly materials were used in the wetland construction. The boardwalk posts are constructed of plastic lumber, which does not leach chemicals into the wetlands and has a longer lifespan than natural wood without wood's tendency to rot. According to Zick, one of the design goals was to keep pressure-treated lumber from coming in contact with the ground. Keeping the treated wood above flood stage prevents the possibility of chemicals leaching into the groundwater and disturbing the wetland ecosystem.

Using a posthole digger, boardwalk posts were set nine-foot on center. Disturbing minimal dirt, thus keeping cut and fill in wetland areas to a minimum, was also a selling point of the boardwalk design, according to Zick. While plastic lumber has a reputation for being a weak support material, especially in terms of tension, it takes the force of compression without any problem. "We purposefully used it to the advantages of the material, which is good in compression and will not rot," says Zick.

The boardwalk also incorporates use of a pin foundation system in a limited way. (For more information about pin foundations, see Ecology, *Landscape Architecture*, November 2001.) "Where the boardwalk meets solid ground we couldn't use the same post and beam support because we were trying to keep the treated wood off the ground," says Zick. At an abutment a grade beam of plastic lumber is laid on its side—a 6 x 6 on a prepared gravel foundation—and pinned to the ground with galvanized pins so that it does not move. "We would also use this detail where we were spanning a stream. Stream banks are important habitat-wise. We could just lay a beam and pin it to the ground without disturbing the integrity of the bank," says Zick.

According to Zick, the design team approached the choice of materials and construction methods with the eye of a Yankee craftsman and farmer. "We incorporated modern materials, but the way they are constructed is meant to emulate Yankee craftsmanship, such as that found at the Old North Bridge. We used a lot of wood and iron, heavy timbers, and played up the hardware," says Zick.

Phase two of the project encompassed the construction of the Battle Road Trail. Approximately one-third of the 5.5-mile trail consists of the renovation of the original Battle Road in two segments, which are then connected by a new pedestrian and bicycle trail that runs parallel with segments of the original Battle Road that are now encompassed by state highway Route 2A. "The original goal was to relocate traffic from Route 2A outside the park and restore that whole section of Battle Road. But, ultimately, it became clear that the relocation of 2A would not be feasible. We decided to restore those sections that we could and ensure that the rest of the state road that remained was treated like scenic state highway rather than a busy commuter route," says Nelson.

The new trail was aligned as a parallel pathway, to mimic the original road while being sensitive to environmental concerns and adjacent landowners. The new trail is constructed at a different width and with slightly different surfacing, so that visitors are aware of the difference between new and historic, whether or not they know beforehand that there is a distinction.

The historic segments of Battle Road Trail range from 11 to 14 feet in width. The design team was able to recreate the historic surface of Battle Road with the help of archaeologists. Materials for construction of the historic trail surface, such as sand and clay, were purchased from local areas where they would originally have been purchased, to replicate as closely as possible the original texture and look. The historically recreated segments of the trail are surfaced with a combination of clay, sand, and a stabilizer product, a powder known as psyllium, which is made from a desert plant called Plantago. The resulting texture is similar to a baseball infield mix. The addition of the stabilizer gives the historically preserved Battle Road the ability to withstand the wear and tear of the bicycles, strollers, and feet that come with more than a million visitors per year.

"We generally knew that Battle Road existed somewhere between the stone walls historically, within the right of way given by the town. We set the alignment of the restored historic trail at the center point between the walls," says Zick. "As to the width of the historic road, we took a best guess. The width of the original road would have varied due to maintenance issues. [The colonists] would have driven around potholes and other obstacles." According to Zick, the elevation of the renovated trail is sometimes within inches of the original and sometimes two feet above. When the original Battle Road was modernized and paved over the years, the elevation was changed, adding fill to reduce curvature. "We purposely kept above the historic road, rather than exposing the actual historic surface, preserving it as a historic record," adds Zick.

The new trail is only seven feet wide, five feet narrower than the average bike path, to make the width of the historic trail that much more striking. The narrow width allows the new trail to blend unobtrusively into the cultural landscape of the park, taking into consideration issues of grading, accessibility, and views; existing property lines; soil quality and future use as fields; and existing wetland ecology. The new trail is surfaced with a mixture of crushed stone, sand, and stabilizer and is laid out with a much curvier geometry than the historic trail. The combination of different texture and walking experience is designed to help cue visitors in to the fact that they have left the historic trail, while maintaining enough similarity to create a smooth transition.

Phase three of the Battle Road Trail project included parts of the trail that could not be finished during phase two due to conflicts with property ownership. "[During phases one and two] there were several term leases [held by the NPS] that had not expired," says Zick. During phase three the NPS took control of the remaining properties along the trail and could finally demolish the 1950s ranch homes and other residual evidence of modern development, providing a more authentic glimpse of 18th-century New England.

As of phase three, the trail is complete as a continuous entity, with only one exception. Hanscom Drive, a four-lane highway leading into Hanscom Civilian Airfield and the Hanscom Air Force Base, which garners a generous amount of commuter traffic from the airport and other area development, currently bisects Battle Road Trail. An on-grade crossing of Hanscom Drive posed too great a safety risk, according to Nelson. Phase four of the project will provide an underpass for Hanscom Road, allowing pedestrians and bicycles continuous access to an automobile-free trail, while maintaining an uninterrupted flow of traffic to and from the airport. In the meantime, the NPS officially stops the trail on either side of the four-lane artery, with liability signs at the crosswalk warning visitors to cross at their own risk.

The underpass is the only part of the Battle Road Trail project not funded by the NPS. Phase four is being funded separately under an ISTEA grant and is scheduled for construction in 2002.

According to Jon Roll of Jon Roll Associates, the environmental graphics consultant on the project, Minute Man National Historical Park has three types of visitors—"streakers, strollers, and scholars"—all looking for something different from their experience, all experiencing the trail at a different pace. The master plan design for Battle Road Trail provides a

variety of interpretive elements to satisfy all three groups.

One of the interpretive goals was to provide a graphic time line so that visitors will be able to understand their location on the trail in respect to the events of April 19, 1775—how many troops were engaged, how far the British troops had traveled from the North Bridge in Concord, Massachusetts, and how far they still had to go in their retreat to Boston Harbor. Granite bollard markers exist along the historic segments of Battle Road labeled on one side with the mileage to Concord and on the opposite with the mileage to Boston Harbor. This interpretive element is also included along the segments of historic Battle Road that are now state highway Route 2A, part of the NPS "scenic highway" motif, scaled larger for viewing from a moving automobile.



Photo by: Jerry Howard

Other modest granite markers exist along the historic segments of the trail, such as several stating simply, "British soldiers buried near here." These markers are meant to remind visitors of the violence of the skirmish battles without disclosing the actual location of British remains, in the hopes of discouraging vandals and relic hunters. A series of granite markers and bronze plaques mark the site and tell the story of the capture of Paul Revere, while others identify and tell the stories of various witness structures or buildings that existed in 1775 along the historic Battle Road. These descriptive markers are combined with "living history" demonstrations (such as those shown in photos on page 68) to bring the events of April 19, 1775, and the spaces where they took place to life for today's visitors.

Minute Man National Historical Park contains a number of historic structures, many of which "witnessed" the fighting on April 19, 1775. Phases five and six of the project will deal with the restoration of these cultural landscape elements, rehabilitating the architectural and landscape architectural setting of Battle Road Trail so that the visitor is thoroughly immersed in 1775. "The rehabilitation will involve 15 acres of clearing. Some sites will go back to hay fields, some to tillage, and some to pasture, allowing visitors to understand the open character now obscured by forestation," says Zick. Manicured lawns will make way for more realistic unmown meadows.

"One of the ongoing challenges for this park is to find a cost-effective way to maintain historically agricultural fields in an open condition, to present a vision of what it was like in Colonial times. We have shifted from a formal clipped [maintenance] practice of lawns and fields to a practice of allowing more generous growth," says Nelson. The NPS has developed a program for agricultural leasing, which helps illustrate the "working" landscape and offsets some of the cost of maintaining the park. "This summer we experimented with the use of sheep to graze in the fields, which was successful on many levels. Visitors were enthusiastic about seeing sheep in the park," says Nelson.

A lot of the design for the trail was driven by archaeology. Orchards were a big part of the economy in the 18th century. Cider was an important cash crop. "We tried to reinforce anything that contributed to the story," says Zick. "Phase six will include the reconstruction of two historic apple orchards, installing apple varieties that were around in 1775, using the original genetic strains planted on original root stock." Today's apples are grafted onto dwarf root stock to keep the branches reachable. The historically preserved orchards will require a ladder.

"The effectiveness of the trail [is found in] the diversity of landscapes that it travels through and the ability to bring visitors into direct contact with historic resources and the story of the park, as well as the absolute beauty of walking along a path that looks as if it has been there for generations," says Nelson.

PROJECT CREDITS

Landscape architects: Carol R. Johnson Associates, Inc., Cambridge, Massachusetts, Kyle Zick, senior associate, project manager. National Park Service, John Tauscher, project manager.

Prime consultant: Bargmann, Hendrie + Archetype, Boston, Joel Bargmann, principal-in-charge.

Environmental graphics: Jon Roll & Associates, Cambridge, Massachusetts, Jon Roll, principal-in-charge.

Owner: Minute Man National Historical Park, National Park Service, Concord, Massachusetts, Nancy Nelson, superintendent.

PRODUCTS

The trail surfaces have a product called "Stabilizer" incorporated into them to decrease erosion and maintenance. "Stabilizer" is manufactured by Stabilizer Solutions, 205 South 28th Street, Phoenix, AZ 85034; 800-336-2468, www.stabilizersolutions.com.

The recycled plastic lumber used on the boardwalks was manufactured by Trimax, US Plastic Lumber Ltd, 2600 W. Roosevelt Road, Chicago, IL 60608; 866-272-8775, www.usplasticlumber.com.

