



# Historic Bridge Bulletin

## From the Director's Desk

Dear Friends of Historic Bridges,

Welcome to the second issue of the *Historic Bridge Bulletin*, the official newsletter of the Historic Bridge Foundation.

As many of you know, the Historic Bridge Foundation advocates nationally for the preservation of historic bridges. Since its establishment, the Historic Bridge Foundation has become an important clearinghouse for the preservation of endangered bridges. We support local efforts to preserve significant bridges by every means possible and we proactively consult with public officials to devise reasonable alternatives to the demolition of historic bridges throughout the United States.

We need your help in this endeavor. Along with our desire to share information with you about historic bridges in the U.S. through our newsletter, we need support of our mission with your donations to the Historic Bridge Foundation. Your generous contributions will help us to publish the *Historic Bridge Bulletin*, to continue to maintain our website at [www.historicbridgefoundation.com](http://www.historicbridgefoundation.com), and, most importantly, to continue our mission to actively promote the preservation of bridges. Without your help, the loss of these cultural and engineering landmarks threatens to change the face of our nation.

Donations to the Historic Bridge Foundation are tax deductible. You may visit our website to pay through PayPal or send a check to PO Box 66245, Austin, Texas 78766.

And don't forget to [like us on Facebook!](#)

**Kitty Henderson**  
**Executive Director**

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## Zenas King and the Bridges of New York City (Part II) King Bridge Company Projects in New York City

*By Allan King Sloan*

When Zenas King passed away in the fall of 1892, his grand plan to build two bridges across the East River (see Part I, *Historic Bridge Bulletin*, Vol 1, No 1, Spring 2014) apparently died with him. Management of the then thriving company fell to his two sons: James, who was President of the company well into the 1900s, and Harry, the younger brother who took over after James fell ill from a failed operation to remove his appendix. Despite legal troubles with anti-trust litigation in Ohio, the company continued to produce bridges at a goodly rate. Both James and Harry were well ensconced in the upper reaches of Cleveland's industrial society, both married with



**The University Heights Bridge as it exists today.** Photo by Robert, flickr.com/photos/rbs10025/ CC BY-NC-ND 2.0.

children and happy with their lives in Cleveland. Moving to New York City was not appealing. While Zenas King's sons made little effort to become major players in New York City bridge building industry, the company did succeed in obtaining a number of contracts to build some of the over 2,000 highway and railroad bridges now in use in the city. Some were constructed after Zenas's death in 1892 and two still stand today. There were three of note, all swing bridges and all crossing the Harlem River and its connection to the Hudson.

## **The Swing Bridges Across the Harlem River and Ship Canal**

The King Bridge Company catalogues of the 1890s displayed prominently two swing bridges built across the Harlem River and Ship Canal connecting to the Hudson. The first was a highway bridge to carry Broadway in Manhattan over the Ship Canal to Knightsbridge Road in the Bronx. The second was a railroad bridge built for the New York Central and Harlem River Railroad north of 125th Street. Both were built in 1895.

### **The (Broadway) University Heights Bridge**

The Broadway Bridge, as it was called, was designed by Engineer Albert P. Boller. Boller, who was a consultant to the newly created New York City Department of Bridges, was responsible for the designs of many of the bridges still standing across the Harlem River, including the famous Macombs Dam Bridge. The King Bridge Company must have had good relations with Boller since both of the King bridges were built to his unique designs. When plans were made to extend the Broadway subway line into the Bronx, the Broadway Bridge had to be replaced to accommodate both rail and street traffic. But



**The Broadway Bridge later became the University Heights Bridge.** Historical Photo.

instead of demolishing the bridge, the powers that be decided to float the superstructure about a mile down the Harlem River to replace the old footbridge a 207th Street and Fordham Road. It became the University Heights Bridge.

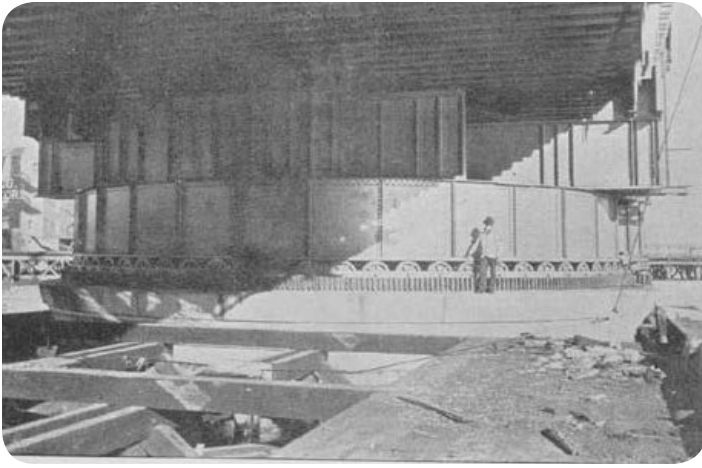
The University Heights Bridge was extensively rebuilt between 1989 and 1992. Little, if any, of the King original structure remains, except perhaps the decorative railings. But it is now one of the series of beautiful bridges featured on the tourist visits around Manhattan conducted by the Circle Line and others.

### **The Park Avenue Railroad Swing Bridge**

This swing bridge was an important link on the railroad system that was being developed to connect



**Park Avenue Railroad Bridge.** Historical Photo.



**Double-drum turntable, Park Avenue Railroad Bridge.**  
*Historical Photo.*

the growing business center of Mid-Manhattan with the fast developing suburban areas in Westchester and Fairfield Counties and beyond. Built in 1896, it was in heavy use by the New York Central and New Haven Railroads until replaced in 1954. It too was designed by Albert Boller.

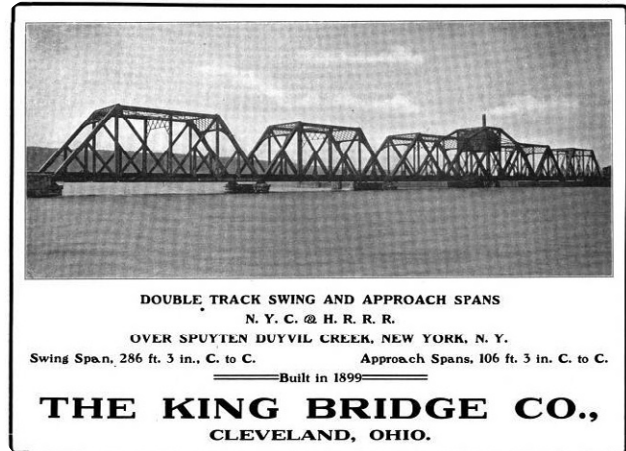
The bridge was known as the Park Avenue Bridge and consisted of a swing span of 389 feet and four fixed trusses of lengths varying from 131 to 185 feet. The cost of the bridge was shared by New York City and the Vanderbilt interests, and was used for close to 60 years by the New York Central and New Haven Railroads as a key link to Grand Central Station.

## **The Multi-Span Railroad Bridge at Spuyten Duyvil**

The Spuyten Duyvil Bridge was the last of the King movable bridges to be built between northern Manhattan and the Bronx after the death of Zenas King. This bridge is still in operation, offering a direct link to Penn Station for commuter service and New

York City's northern suburbs. Movable bridges and other structures for the railroad companies were becoming a key component of their business.

Over the course of the last century, the Spuyten Duyvil Bridge has been in and out of service as a result of the fate of the then current railroad owners. It is now owned by Amtrak which, even after a spectacular fire in 2010, found it still operable.



**1899 advertisement for the King Bridge Company featuring the Spuyten Duyvil Bridge.**

To accommodate boat traffic moving from the creek into the Hudson River, the swing span has to be opened often, particularly during the warm weather months when the tour boats of the Circle Line and others make their dramatic entrance onto the Hudson through this portal.

The bridge has now become one of the most visible sights to visitors to New York City as a result of its location and “gateway” function. Judging by the number of times it is photographed, the bridge has also become part of the “psyche” of New York City residents. As long as it is used to transport trains

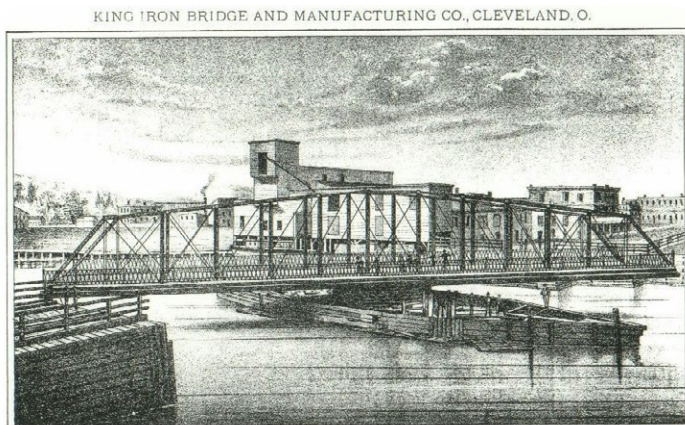


**Spuyten Duyvil Bridge in open position.** *Photo by WorldIslandInfo.com.*

across the inlet, it is probably safe from destruction. However, if the rail service is abandoned, there is a risk that this 100+ year old bridge will face demolition. Hopefully, the bridge, one of the last of its kind in the country, will receive consideration as a potential “historical landmark.”

## Two Movable Bridges in Brooklyn

The King Bridge Company also received contracts to build other smaller bridges in New York. In a company catalogue from the 1880s, there is a lithograph drawing of a swing bridge closely following the lines of Zenas King’s patented design on Manhattan Avenue in Brooklyn which was probably removed some years ago.



**Manhattan Avenue Bridge in Brooklyn.** *Historical Lithograph.*

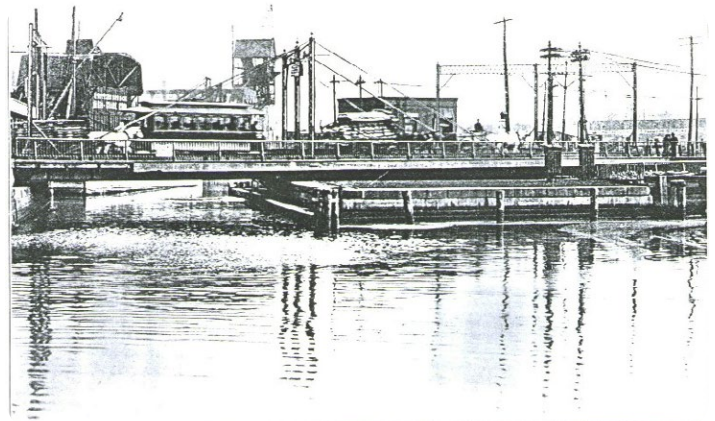
The King Bridge Company did receive credit as the builder of a 123 foot retractile bridge constructed in 1893 to carry pedestrians, wagons and trolleys across the Wallabout Canal at Washington Street in Brooklyn. While this bridge was not featured in the Company catalogues, the L (Summer) Street Bridge in South Boston over the Reserved Channel, a retractile bridge of similar design, was pictured. It was in service for over 100 years. Both the Washington Street and Summer Street Bridges have been replaced.

## Other King Bridges Farther Afield

Outside of New York City, but within hailing distance, there are a number of other King-built bridges still standing or just recently demolished, including railroad structures which play or did play an important role in transporting people and goods to New York City. Also there are some other small

movable bridges which have been restored as part of historic sites. These include the following:

- **LIRR Manhasset Viaduct** – The Long Island Railroad is the largest passenger railroad in the country carrying millions of passengers daily to and from the outlying areas of Long Island to the center of Manhattan and back. There is still one structure used by the LIRR in which the King Bridge Company apparently played a role in its construction. It is the Manhasset Viaduct on the Port Washington branch of the LIRR that was constructed in 1897 and is still in operation today.
- **The Rosendale Trestle** – The Wallkill Valley Railroad was once an important facility carrying cement and other construction materials from the Hudson Valley to New York City in its early building boom. The trestle on this railroad crossing Rondout Creek at Rosendale in Ulster County, built by the King Bridge Company in 1896, is still standing and has been restored and converted as part of an important hiking-biking trail system.



**Historical view of the Washington Street Bridge at Wallabout Canal, Brooklyn.** *Courtesy New York City Archives.*

- **“Old Nan”** – This was a Scherzer lift bridge on New Haven Railroad west of New London crossing the Niantic River. It was built in 1907 and in operation until just last year when it was replaced. It was the oldest bridge still in operation, carrying the ACELA high speed trains between New York and Boston.
- **Swing Bridge** – Across the Hackensack River at River Edge in Bergen County, New Jersey, adjacent to the historic Steuben House. It has been restored for pedestrian use by the county and has a hand operated turntable.

- **Lift Bridge** – At Piermont, Rockland County, New York, is a one-of-a-kind hand operated lift bridge across Sparkill Creek which has been restored by the county as part of a historic district.

More information on these bridges can be found on the [www.kingbridgecompany.com](http://www.kingbridgecompany.com) website.

*Allan King Sloan is the great grandson of Zenas King, founder of the King Bridge Company of Cleveland, Ohio. The Allan King Sloan Family Fund is a donor-directed charitable gift fund set up by the descendants of the Zenas King. It was established in 2000 to provide funds to various nonprofit organizations involved in documenting and preserving historic bridges.*

## Hays Street Bridge

*By Doug Steadman*

In the early 1900s, when the Galveston, Harrisburg, and San Antonio (GH&SA) railroad planned to cross many of San Antonio's eastside streets with its mainline, the city of San Antonio would only grant approval if an above grade crossing, or viaduct, was built for the residents to cross over the railroad to get to downtown. The railroad agreed and, in 1910, moved two narrow-gauge iron trusses to San Antonio and constructed long approaches of concrete coming down to grade level on both the east and west ends. These trusses were built in 1881 and had formed a bridge over the Nueces River in southwestern Texas.



**Concrete approach spans for the Hays Street Bridge prior to rehabilitation.** Photo by Patrick Sparks.

One span was a 130 ft. long Pratt truss and the other (and more historically significant) was a 225 ft. long Whipple truss built by the Phoenix Bridge Company of Pennsylvania. The spans were easily dismantled and moved to San Antonio because the joints were connected with large removable laminated steel pins. The spans were widened from their original 16 ft. width to 25 ft. to carry vehicular traffic, which in 1919 was mostly wagons.

The viaduct served its purpose until 1982, when it was closed to vehicular traffic after being determined to be structurally deficient. In the ensuing years, the city of San Antonio sought to move the bridge to another location or to demolish it and have the Texas Department of Transportation (TxDOT) replace it. The deck and concrete approaches continued



**Hays Street Bridge after rehabilitation, showing new approach spans to the right.** Photo by Patrick Sparks.

## Case Study: East Delhi Road Bridge

- **Location:** Washtenaw County, Michigan
- **Type:** 109 foot single span, pin-connected Pratt through truss. Built ca. 1883 by Wrought Iron Bridge Company of Canton, Ohio. 16 foot (one lane) roadway.
- **Purpose of Rehabilitation:** Continued vehicular use in original location.
- **Year of Rehabilitation:** 2009
- **Details:** This closed bridge gained strong preservation support from locals. There are several aspects of the rehabilitation that are noteworthy.

The original railing had been removed and replaced with a guiderail mounted to the trusses. This was removed and replaced with a steel tube guiderail mounted on the deck rather than the trusses, which better protects the historic trusses from damage. Only one of the two identical builder plaques remained on the bridge. Two replica plaques were cast from the original and put on the bridge, while the original plaque was placed into storage. This solution protects the original plaque from damage or theft and it can serve as a pattern for additional replicas if needed.

The rehabilitation is an outstanding example of how a one-lane bridge, even on roads with traffic in excess of what AASHTO defines as a Very Low Volume Roadway, can be retained as safe and functional crossings. The average daily traffic (ADT) on the bridge was 750 with projections for traffic to eventually increase above 1000 ADT. The rehabilitation of this bridge included the installation of traffic signals at each end of the bridge to control the flow of traffic over the bridge.

The rehabilitation cost was \$1,380,000. Most of this was paid for by the Michigan Department of Transportation, while the owner (the county road commission) paid for a small portion as did several other involved parties including the Citizens for East Delhi Bridge Conservancy. Delhi Mills residents near the bridge agreed to a special assessment tax which will be for the cost of bridge maintenance.



*Photo by Nathan Holth.*

to deteriorate until 2000, when a group consisting of the San Antonio Planning Department, eastside residents, the San Antonio Conservation Society, bike enthusiasts, and engineers, calling themselves the Hays Street Bridge Restoration Group, got together in a concerted effort to raise funds to restore the bridge for pedestrian and bicycle traffic.

In 2001, the Hays Street Bridge was designated an American Society of Civil Engineering Texas Historic

Civil Engineering Landmark. The city of San Antonio made a commitment for the restoration and in 2002 applied for and received a grant from the TEA-21 (Transportation Equity Act of the 21st Century) program. The program was administered by TxDOT and provided 80% of the costs for restoration (\$2.89 million). The city of San Antonio was required to provide the additional 20% of the funding.

In 2005, members of the Hays Street Restoration



**Phoenix columns on the Hays Street Bridge.** *Photo by Patrick Sparks.*

Group saw the need for an area for visitors and tour bus parking, as well as a community park. The group approached BudCo to request the donation of 1.69 acres just north of the bridge for that purpose. BudCo agreed to the donation, and the city of San Antonio accepted the donation of the land on behalf of the preservation group. The land was valued at \$250,000. The land was cleared environmentally by two studies, at the cost of approximately \$25,000. On October 4, 2007, the San Antonio city council accepted the property with this statement: “as community public space.”



**The Hays Street Bridge after rehabilitation was completed and the bridge opened to pedestrians.** *Photo by Patrick Sparks.*

Since the bridge was owned by the Union Pacific Railroad, it was necessary to get the ownership changed to the city of San Antonio. Those negotiations took 5 years for the transfer to be made. Design work began in 2008, after the selection of

an engineer for the project--Sparks Engineering of Round Rock, Texas. The rehabilitation involved rebuilding the bridge's two elevated concrete approaches, structurally rehabilitating and painting the truss spans, and adding lighting, landscaping, and interpretive signs. To ensure compatibility with the bridge's character, the work was carried out in accordance with the Secretary of Interior's Standards for Rehabilitation.

When rehabilitation was completed, a grand reopening ceremony was held on July 20, 2010. The Hays Street Bridge continues today as a bike and pedestrian bridge. It was listed on the National Register of Historic Places in September 2012.

*Doug Steadman is a retired structural engineer from San Antonio Texas. He led the crusade to restore the Hays Street Bridge for pedestrian traffic.*

## Sewall's Bridge Colonial Engineering on Display in York, Maine

**By Robert Gordon**

Sewall's pile-trestle bridge, built over the York River in 1761, is the earliest bridge in America for which we have builder's drawings, and the first designed on the basis of a geotechnical site survey, and to have its construction technique patented. In 1743, the people of York, then a frontier town with an expanding economy, had spread themselves along both sides of the deep, swift York River. Thirty-three year old Samuel Sewall undertook the formidable challenge of bridging a river channel where bedrock plunges to a depth of 74 feet and the tidal current runs at 2 ft/sec. His drawing shows the bridge 270 feet long and 25 feet wide with a 30 foot draw supported by thirteen bents. Each bent is made of four piles diagonally braced at the top with a cross piece below and timber cap above.

When Sewall probed through the recent marine sediment on the river bottom to the underlying consolidated glacial drift, he found he would need 40 foot long piles driven through ten feet of harbor bottom sediments to reach firm support for the bridge. Each bent could be assembled on shore.

**T**he Historic Bridge Bulletin is a newsletter published three times a year by the Historic Bridge Foundation. It is distributed for free by email and available at [historicbridgefoundation.com/hbbulletin](http://historicbridgefoundation.com/hbbulletin)

If you would like to subscribe to the bulletin, please contact us at [info@historicbridgefoundation.com](mailto:info@historicbridgefoundation.com).

If you would like to write an article, please let us know and we will send you the requirements. The Historic Bridge Foundation is the national advocacy organization for the preservation of historic bridges in the United States. Visit our website to learn more at [www.historicbridgefoundation.com](http://www.historicbridgefoundation.com).

The Historic Bridge Bulletin is edited by Nathan Holth under the direction of Kitty Henderson, Executive Director of the Historic Bridge Foundation.

The difficult problem was how to set them upright in the river, and then drive them through the harbor bottom deposit when he had neither a pile driver nor a crane capable of lifting so large a structure. Oral tradition asserts that "The bents were floated in place at slack water, set upright and guyed. Large and heavy oak logs, their tops or lighter ends secured inland, the butts raised by tackles, were released to fall on the caps to drive the section to the desired depth." This omits the critical step of how the bents were set upright. An assembled bent weighed about four tons, was 40 feet long, and once floating on the river would have to be raised at least 24 feet. No one in colonial York had equipment that could do this.

Sewall's innovation can be reconstructed from the data in his drawings and a recent geotechnical survey of the site. An assembled bent could be erected without lifting equipment if it were pushed off the end

of the partially completed bridge so that its lower end dropped onto the harbor bottom mud at the right place while the top remained resting on the bridge edge. Its weight had to overcome the buoyant force acting to lift the submerged section. Calculation based on Sewall's bridge dimensions and the water and sediment depths shows the downward (sinking) torque acting on a bent leaning on the bridge edge with its bottom end on the river sediments just exceeds the upward (floating) torque. A pair of oxen working with rope and pulley to reverse their thrust could then push the bent upright so that the pile driving technique described by oral tradition could finish the job.

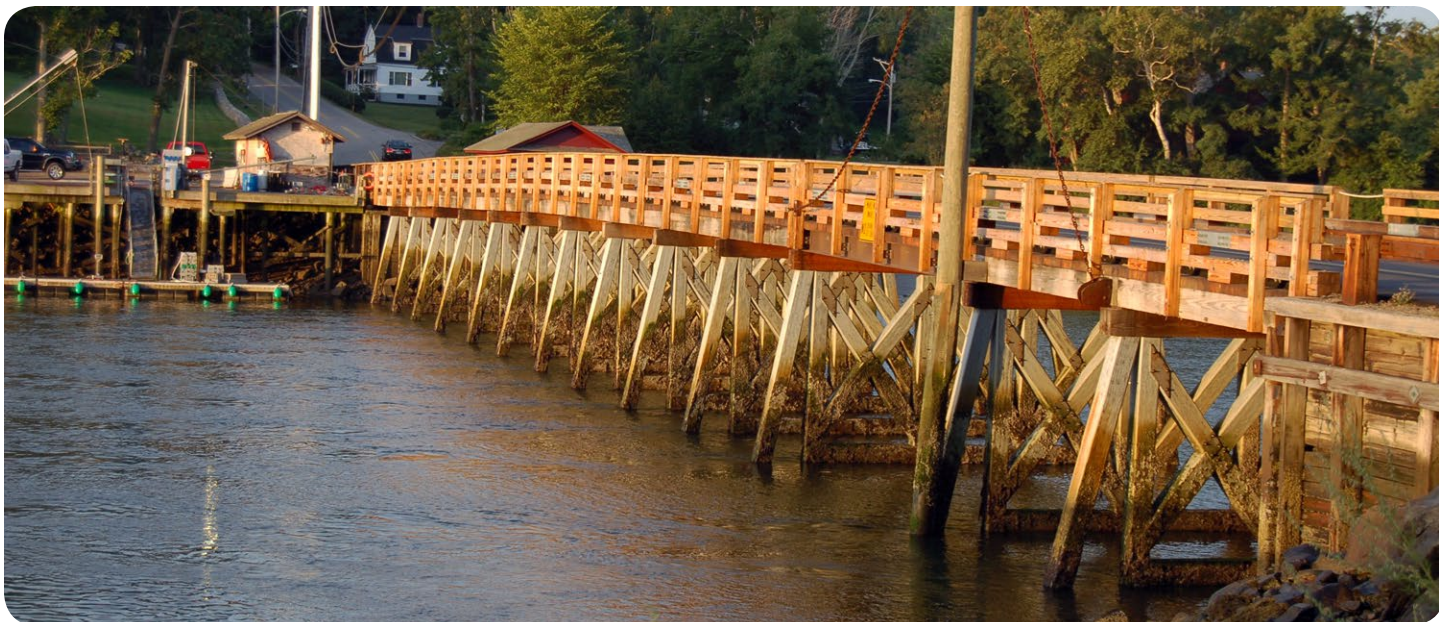
The success of Sewall's technique depends critically on close calculation of the spacing of the bents relative to the depths of water and the thickness of the harbor bottom deposit that had to be penetrated. The method would not work at this bridge site if the spacing of the bents was larger than Sewall made it, since a bent resting on the edge of the bridge would not sink to the river bottom. Sewall's design achieved the largest possible spacing of the bents that would allow erection of the bridge at this site without a crane. His procedure depended on a careful geotechnical investigation of the site coupled with exact calculation of the bent spacing and pile length. Therein lays the sophistication of Sewall's method, and a basis of the 1791 patent, the 6th issued by the U.S. federal government.

Sewall and John Stone used his construction technique to build the 1,500-foot pile-trestle bridge that in 1786 linked Boston with Charlestown, and remained in service until replaced in 1899. Construction was completed there in eighteen months. Then, in 1788, builders in Beverly, Massachusetts, erected an even longer bridge to

Salem that they completed in six months. Others adopted Sewall's design and erection technique for pile-trestle bridges they built in rivers and harbors throughout New England that had previously been



**Sewalls Bridge before reconstruction. Historical Photo.**



**Sewalls Bridge after reconstruction.** *Photo by Robert Gordon.*

served only by ferries. American engineers Cox and Thompson reportedly introduced Sewall's technique in Europe.

Although Sewall's York bridge gave good service, even carrying interurban trolleys over the river from 1897 to 1920, by 1933 heavy truck traffic was overloading it. The town wanted state aid for a

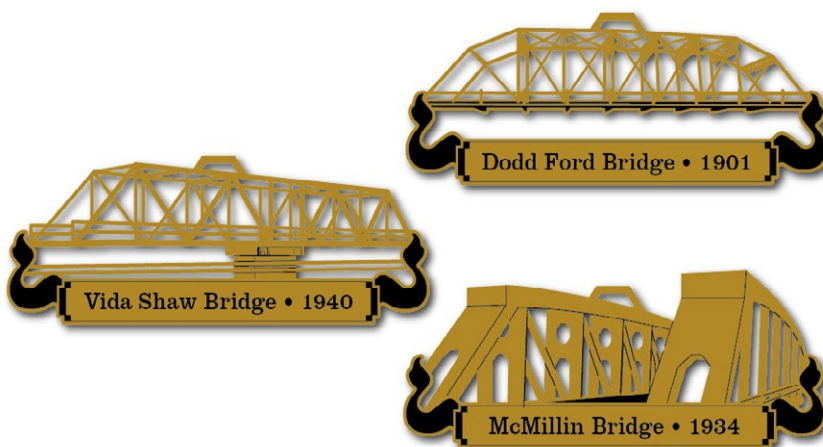
replacement, but Maine made funds available only for a concrete or steel structure. A battle developed between the preservationists, who wanted the new bridge to retain the historic structure of the original, and the moderns, who want a steel structure and the state subsidy. The preservationists prevailed, not through appeals to history but by hiring a bridge

## The Historic Bridge Foundation

### Historic Bridge Collector's Ornaments

These historic bridge ornaments represent three bridges the Historic Bridge Foundation has been working to preserve over the past several years: the Dodd Ford Bridge, a 1901 pin-connected Pratt through truss near Amboy, Minnesota; the 1934 McMillin Bridge, one of only three concrete through trusses in the nation located in Pierce County, Washington; and the Vida Shaw Bridge, which was built in 1940 and is one of only two remaining rim-bearing swing bridges in Louisiana.

Each ornament comes in perma-suede folder with a certificate that provides details on the bridge and its history. Each ornament is available for a \$50 donation to HBF. For more information or to order, contact Kitty Henderson, 512-407-8898, [kitty@historicbridgefoundation.com](mailto:kitty@historicbridgefoundation.com)



builder who showed how a wood replica would actually be less expensive, and that the money that would otherwise have gone to bondholders could pay for maintenance of the wood structure. With the aid of press coverage, preservationists convinced the governor to take the subsidy anyway. All was well with the replacement replica bridge until an inebriated driver plunged his truck off it in 2011. Reconstruction was needed and this time no one objected to a replica of Sewall's original design. The Maine Department of Transportation completed it in 2013 with modern materials and the addition of diagonal piles to better resist the tide-driven winter ice.

*Robert Gordon is emeritus professor of geophysics and applied mechanics at Yale University.*

## Set in Stone

### Rehabilitating Historic Stone Arch Bridges in Western Maryland

**By Amy Lambert, CPSM, and Robert Lynch, PE, KCI Technologies Inc.**

Washington County, Maryland, is home to more than 20 stone masonry arch bridges, many of which have played witness to our nation's growth and struggles. Residents and officials alike are proud of the bridges and their legacy, dating back to the transportation network devised by George Washington and first implemented under Thomas Jefferson. Originally planned for military access, this roadway system became a critical piece of the nation's infrastructure network by allowing more efficient transport of agricultural harvests and commercial products. It also played a major role in the Civil War, carrying both Union and Confederate troops as they marched across the countryside for battles at Antietam and beyond.

For more than a decade, consulting engineering firm KCI Technologies Inc. has been working with the county government through a state-led contract to rehabilitate many of these bridges, which weren't built to carry 21st century truck loads. To date, rehabilitations are complete or in process for 11 bridges, ranging from single to four-span crossings carrying a single lane of traffic. Each was constructed

by local builders during the early to mid-19th century, and all are eligible for the National Register of Historic Places.

Many of the structures had been repaired during the 1970s and 80s by adding a concrete cap over the arches and drainage pipes within the existing soil/gravel fill. But by not replacing that fill during those rehabilitations, many of the structures began suffering from bulging spandrel walls and deteriorating mortar



**Built in 1833 by George Weaver, the East Oak Ridge Drive bridge over Antietam Creek boasts a unique design of three arches that grow progressively larger as they cross the creek toward the west, carrying the roadway from low ground to high ground. Weaver's design also combined both rounded and pyramidal piers on the downstream side of the structure, unique only to this bridge. Photo by Washington County, Maryland.**

joints. In addition, some had been resurfaced so many times that the distance between the top of the parapet wall and the roadway surface had been significantly reduced, in one instance to only one foot high.

The first step for these rehabilitations was to inspect the bridge for condition and damage. In addition to missing or fallen stones, engineers routinely found some level of water seepage through the fill material, causing the walls to bulge. Damage ranged from very minor to extreme, creating the potential for structural failure.

Rehabilitation strategies focused on strengthening the bridge and removing weight restrictions without affecting the appearance of the historic structure. All rehabilitation plans met the Secretary of the Interior's Standards as well as those set by the Maryland Historical Trust. Each project followed a similar



**Water seepage through the open masonry joints caused the failure of the pier nose and spandrel wall.** Photo by Washington County, Maryland.

process and required full detours over a six-month construction timeline.

After precautionary shoring was constructed under the arches, the soil and gravel was removed over each span in layers using a symmetrical sequence that allowed the bridge to remain standing on its own throughout the reconstruction. The soil and gravel is not considered a character defining element



**Contractors removed soil and gravel fill in layers using a balanced sequence to expose the arches. Bottom layer of reinforcing is shown being placed prior to the addition of lightweight concrete.** Photo by KCI Technologies Inc.

of the historic structure. Crews then reversed the process, adding light-weight, reinforced concrete that approximated the characteristics of the soil fill in two-foot high lifts until it reached the roadway surface elevation.

Once the concrete was set, contractors concentrated on the bridge spandrel walls, removing

any areas that were bulging or displaced. Stones were removed in an orderly fashion so they could be placed close to their original location, maintaining the historic integrity of the structure. For pier noses, individual stones were numbered to ensure their exact placement. Local quarries were identified to replace missing stones if the existing masonry could not be found in the stream below. The entire structure was then repointed to replicate the original masonry mortar color and joint finish type.

Engineers also worked to protect each bridge against scour damage that can occur over time or when streams swell with stormwater. Even though most of the bridges were free of scour impacts because they were built on bedrock foundations, riprap or cast-in-place reinforced concrete was placed around the base of piers to form a band of protection



**Stream diversions and scaffolding helped contractors replace stones near their original position and repoint all masonry joints.** Photo by Washington County, Maryland.

where fast moving currents can be most damaging.

Each of the 11 arch bridges also posed individual challenges. Rehabilitation of the Broadfording Road bridge over the Conococheague Creek resulted in an eight-mile detour, which necessitated construction to be completed during the summer months to minimize impacts to school transportation schedules. This waterway is a wide, fast moving stream, and a wet summer increased flows, making stream diversions difficult to maintain.

The alignment of several of the structures created sight-distance problems for drivers because of a hump in the bridge profile or the curve of adjacent approach roadways. In one case, approach roadways were



**Plans for the Rose's Mill Bridge on Garis Shop Road include rehabilitating the adjacent historic mill race structure.** Photo by Washington County, Maryland.

raised and stop signs added to improve site distance and decrease the risks to motorists.

The East Oak Ridge Drive bridge lies within a community and therefore carries heavier daily traffic. Because the structure's walls were failing, it was rehabilitated under an accelerated schedule and was later honored with an award by the County Engineers Association of Maryland.

No matter the challenges or individual circumstances, the last stages of construction involved application of a new road surface and installation of traffic barriers. Once complete, the future of each bridge, as well as their functional and aesthetic contributions to the community and region, is once again set in stone.

*Robert D. Lynch, PE, is a senior structural engineer and project manager at KCI Technologies Inc. with more than 32 years of industry experience in new design and rehabilitation of bridges, noise walls, retaining walls, culverts and pipes. Amy E. Lambert, CPSM, has more than 25 years of experience with the KCI and currently serves as the director of corporate communications.*

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## Upcoming Conferences

### **PastForward: National Trust For Historic Preservation Conference 2014**

Location: Savannah, GA

Date: November 11-14, 2014

Note: Please visit the Historic Bridge Foundation table on November 13th and 14th!

Website: <http://www.pastforward2014.com/>

### **Section 106 Essentials Training**

Location: Savannah, GA

Date: November 11-12, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=3799>

### **Preservation Advocacy Workshop**

Location: Seattle, WA

Date: November 8, 2014

Website: <https://www.historicseattle.org/events/eventdetail.aspx?id=601>

### **NPI Professional Training Seminars**

Location: Atlanta, GA

Date: November 17-20, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=4298>

### **NPI Seminar: Section 106: Agreement Documents**

Location: Mount Vernon, VA

Date: November 17-19, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=4299>

### **The Secretary of the Interior's Standards: Treatment Considerations**

Location: Los Angeles, CA

Date: November 18-19, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=4300>

## Restoration Celebration

Location: Portland, OR

Date: November 5, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=4377>

## 2014 Society of Architectural Historians Awards Gala

Location: Chicago, IL

Date: November 8, 2014

Website: <http://www.preservationdirectory.com/PreservationNewsEvents/NewsEventsDetail.aspx?id=4233>

### Call for Papers - January 31, 2015

#### 44th Annual Society for Industrial Archeology Conference

Albany, New York - May 28-31, 2015

The 24th Historic Bridge Symposium will be held in conjunction with the SIA conference. To receive information on paper proposals for the Historic Bridge Symposium, contact Kitty Henderson at [Kitty@historicbridgefoundation.com](mailto:Kitty@historicbridgefoundation.com), 512-407-8898



The McMillin Bridge in Pierce County, Washington. This bridge had been threatened with replacement and demolition as the Washington State Department of Transportation (WSDOT) planned a project to construct a new bridge and then demolish the historic bridge. The Historic Bridge Foundation, along with many other preservation-minded organizations, participated as a consulting party in the Section 106 Review for this bridge. The process took several years, and has today resulted in WSDOT agreeing to leave the historic McMillin Bridge standing, and its replacement will be constructed on a new alignment. *Photo by Nathan Holth.*

