

CASE HISTORY AMERICAN BRIDGES

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Technology



Aldie Bridge.

The Aldie Bridge in Northern Virginia carries a significant traffic flow on State Route 50 from Washington DC to the East and the rural communities of Northern Virginia to the West. Good traffic management was an essential feature of the strengthening project and one lane always had to be available for traffic day and night with both lanes open at peak times. The twin arches were refurbished and reinforced to a loading of HS 25 and the surrounding environment was fully protected during the drilling and anchor installation process. The project was completed in 21 working days on site with minimal traffic disruption, maximum environmental protection and the preservation of the character of this important local historic structure.



Wisconsin Avenue Bridge.

The Wisconsin Avenue Bridge over the C&O Canal in Washington DC carries a major road link between busy Georgetown and the Western end of K Street above the Potomac River. The complicated area traffic management plan required one lane to be open at all times throughout the modification phase of the project and the anchor installation was completed in 18 working days. Being in the center of an area known for its restaurants and bars, the drilling operation attracted a regular crowd of on-lookers. 12 longitudinal anchors and five transverse anchors were installed to strengthen the bridge to an HS 25 loading. The bridge was strengthened and restored to its historic character as a well known landmark of Georgetown.



Century Lane Bridge.

The Century Lane Bridge is a single lane twin arch masonry bridge spanning 'Poquessing Creek', the border between City of Philadelphia and Bucks County, PA. The bridge was fully closed during the strengthening project and anchor installation could proceed without disruption of work due to traffic management considerations. Some masonry refurbishment was carried out on the spandrel walls and central pier after the longitudinal and lateral anchors had been positioned. The reinforced bridge, restored to its historic character, was handed back to the City after only 5 weeks on site, including the provision of a new deck and approach roads.



Leominster Bridge.

The Leominster Bridge, MA is a three-lane twin arch bridge carrying a large traffic volume into the center of town through busy intersections at each end of the bridge. This major reinforcement project required a sophisticated traffic management plan to ensure traffic flows were maintained throughout the drilling and anchor installation phases. The anchor installation work took 28 working days and the bridge loading was increased to HS 25. During the mobilization, the bridge was wired for load monitoring after the main contract was completed. Sensors are to be installed in the bridge and calibrated to enable the stress and loading to be continuously monitored and measured.



Newcomers Bridge.

A single arch random masonry structure, Newcomers Bridge over the Savage River was built in about 1850 and provides the only road access to a small, community to the West of Frostburg, MD. The bridge is at an altitude of over 3,000 feet and the strengthening was undertaken during a severe winter. Four large longitudinal and many lateral anchors were installed into the barrel, to bring the bridge loading up to HS 20. Considerable masonry refurbishment was needed to restore the spandrel walls and intra-dos in order to recover and enhance the character of this historic bridge.



Puente Laguna Condado.

The Puente Laguna Condado is a principal entrance to San Juan Puerto Rico. It is multiple steel girder bridge built in 1926. The marine environment had substantially weakened the bridge and as an emergency measure, steel seat brackets were installed under each beam and connected to the concrete piers. This was achieved with corrosion resistant and highly compatible cementitious Cintec anchors.



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