



Photo Credit: City of Ottawa

GATEWAY TO THE CAPITAL

Landmark bridge is the first of its kind in North America

By Theresa Rogers

WHEN PARSONS ENGINEERS WERE RETAINED BY THE CITY OF OTTAWA to construct a new bridge crossing the Rideau River and connecting with communities south of Ottawa, they knew it had to be special.

The design had to be compatible with the 2007 UNESCO World Heritage Site designation and meet stringent guidelines set by the city as well as other agencies including Parks

Canada and Transport Canada. Parsons performed services including the design, documentation, inspection and engineering services during construction. The scope of engineering services included bridge, transportation, traffic, drainage, electrical engineering, and environmental and stakeholder management.

Jack Ajrab, Senior Structural Engineer at Parsons says this challenging project, named Vimy Memorial

Bridge, is distinctive. "It's unique from an engineering and aesthetic perspective so we believe it's a winning structure."

High environmental and aesthetic standards were set for the bridge, which spans an 80-metre wide waterway and offers eight lanes of traffic on a 40-metre wide deck including two dedicated bus rapid transit lanes, bicycle lanes and pedestrian walkway.

FACTS

- + Commuting time and distance between the communities of Riverside South and Barrhaven were reduced by 16 minutes and 12.5 km, respectively.
- + The overhead structure is comprised of tubular triple arches with a 125-metre main span.
- + The bridge spans an 80-metre wide waterway.
- + Cost: \$43 million



Photo Credit: Parsons

The bridge had to be light and airy, says Ajrab, not obstructing the views or affecting the natural environment.

The National Capital Commission's input was specific: It wanted a crossing that would "astonish and inspire"; enhance the experience of using the Rideau Canal; avoid heaviness and reduce the apparent scale; act as a gateway to the national capital; and use naturalistic landscaping and enhance the experience of those walking the riverbanks.

The solution was a clear span bridge which features three interdependent steel tube arches supporting a suspended deck tied together by a hangar system. The hangars are attached to steel grills supporting the concrete deck, which not only transfer the heavy loads but allow light through the deck and under the bridge. This enhances the experience for pedestrians and small boats

crossing under the bridge. It's a unique design and the first of its kind in North America.

Aside from the design and aesthetic challenges, Ajrab says there was one other surprise. "The contractor went into receivership during construction and that was a bit of a hurdle to deal with." Everything else went according to plan, he adds.

The Vimy Memorial Bridge was named at a formal ceremony at the bridge site in November, 2014. It commemorates the battle of Vimy Ridge and honours those Canadians who gave their lives in the legendary battle.

Ajrab says after working on the bridge for six years, he's happy to see it built and winning praise.

"It's usually a challenge to have an aesthetically pleasing structure built, especially with a tight budget but sometimes... it's all worthwhile."