



2018 AWARDS FOR ENGINEERING EXCELLENCE

Award of Merit Veer Kunwar Singh Setu



Consultant

McElhanney Consulting Services Ltd.

Owner

Bihar Rajya Pul Nirman Nigam Limited

Client

SP Singla Constructions Pvt. Ltd.

Category

Transportation and Bridges

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The 4,350m Veer Kunwar Singh Bridge opened in June 2017 and rapidly changed the 'kismet' (or destiny, a popular belief in India) of some of the most underprivileged people world-wide. The bridge has reduced the commute from Northern to Southern Bihar by four hours, critically supporting the government's economic initiatives of providing the north with direct access to educational, business, and cultural opportunities in the capital city of Patna.

This new bridge was one of the key promises Chief Minister Nitish Kumar made in 2010. However, the procurement process took longer than anticipated, and when contractor SP Singla was awarded the project in 2013, they were told to cut the project duration by at least 12 months. SP Singla engaged McElhanney to value engineer a faster-to-build, iconic design at minimal cost increase.

The as-bid design was a cast-in-place, variable-depth segmental box girder superstructure for the navigation spans, and constant-depth precast box girder system in the approach spans. Saving 12 months required new thinking. McElhanney proposed an extradosed system in the navigation spans instead, which combines the structural efficiency and aesthetics of stay-cable technology with the robustness of a girder system. The Veer Kunwar Singh would be the longest extradosed bridge in the world.

BC engineers navigated restrictions and challenges including monsoons, the 2015 nearby Nepalese earthquakes, cultural challenges, an inexperienced contractor, and an extremely compressed schedule to deliver the state of Bihar an iconic bridge that is not only aesthetically interesting but enriching the living standard for India's poorest people.