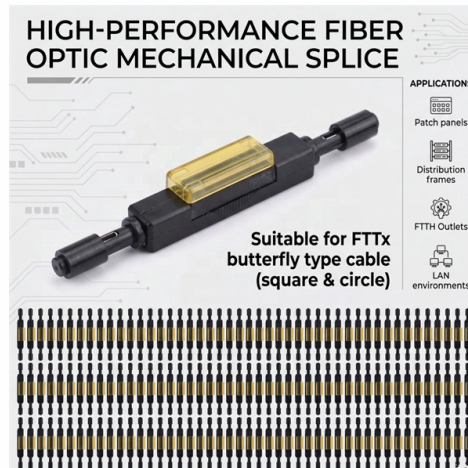


Sri Lanka Bridge Structure with Large Span



Overview

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Key Takeaways

The New Kelani River Bridge is Sri Lanka's largest long-span bridge, featuring a 180-meter main span extradosed design with advanced prestressed concrete and steel box girder technology. Overview of the New Kelani River BridgeThe New Kelani River Bridge, located about 5 km north of Colombo, is the country's first extradosed bridge, combining elements of prestressed box girder and cable-stayed bridges. It was constructed to accommodate the growing traffic between Colombo and Bandaranaike International Airport, forming part of the Colombo-Katunayake Expressway expansion.

The bridge has a main span of 180 meters and two side spans of 100 meters each, making it one of the largest-span bridges in Sri Lanka.

Structural Design and Features

Bridge Type: Extradosed bridge with three-cell prestressed concrete box girders.
Support System: Reinforced concrete pylons with 2-meter diameter bored pile foundations, pod bearings, and longitudinally fixed connections at one pylon while others remain free. Construction Method: Balanced cantilever method, allowing efficient construction over the Kelani River without extensive temporary supports.



Pylons: Slanted outward with curved tips for aesthetic appeal, extending 23.4 meters above the deck, approximately $L/9$ of the main span. **Traffic Capacity:** Six-lane bridge designed to handle high urban traffic volumes, including 86,000 vehicles on Baseline Road and 27,000 on Port Access Road.

Technical Standards: Designed according to BS5400 and Japanese bridge design standards, with high-performance steel and epoxy-coated prestressing strands.

Additional Large-

Span Bridges in Sri Lanka Other notable long-span bridges include: Sangupiddy Bridge: Connects Jaffna Peninsula, symbolizing regional development. Kinniya Bridge: A major bridge in the Eastern Province, enhancing connectivity. Bridges constructed under the Japanese ODA project: 18 major bridges on national roads, replacing older structures to improve transportation efficiency.

Engineering Significance

The New Kelani River Bridge represents a major advancement in Sri Lankan bridge engineering, integrating extradosed technology, high-quality materials, and international collaboration. Japanese consultants and contractors worked alongside Sri Lankan engineers to transfer technical expertise, ensuring long-term durability and modern design standards. Its combination of long main span, aesthetic pylons, and advanced construction techniques makes it a benchmark for future large-span bridge projects in the country.

This bridge not only addresses traffic demands but also serves as a symbol of modern infrastructure development in Sri Lanka, demonstrating the application of extradosed and prestressed concrete technologies in tropical urban environments.

Article Content

COMPARATIVE ANALYSIS ON SIMPLY SUPPORTED PRE

The National Road network of Sri Lanka consists of 4326 bridges. There are 365 bridges which have the length more than 30m. Only 800 bridges are made of prestressed concrete superstructures and all

Bridge-Hopping Sri Lanka: A Self-Drive Tour of the

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Peradeniya 4-Span Railway Bridge (Yaka Palama)

As part of the restoration initiative, Central Engineering Consultancy Bureau, in collaboration with Sri Lanka Railways and University of Peradeniya, conducted a joint site inspection to assess the

List of bridges in Sri Lanka

This is a list of bridges in Sri Lanka. "Kottawa-Kaduwela Expressway to open next month". 10 Feb 2014. Range, Irangika (23 June 2011). "Lanka's longest bridge". Daily News (Sri Lanka). Archived from the

New Kelani river bridge

The New Kelani River Bridge is a bridge across the Kelani River in the Sri Lankan capital city Colombo. It was constructed in 2021, and is the country's first extradosed bridge.

New Bridge Construction Project over the Kelani River

Located just 5 km north of Colombo's city center, this project comprised two distinct packages of advanced bridge construction. Package 1

New Kelani River Bridge

The bridge was built to cross the Kelani River in the capital city, Colombo, connecting to the main expressway serving the international airport of the city.

Historical places in sri lanka

Completed in 1921 during British colonial rule, the bridge is known for its impressive structure, featuring nine large, beautifully arched spans that create

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"Sangupiddy Bridge opened: a symbol of UK support to Sri Lanka". News. British High Commission, Colombo. 17 January 2011. "New bridge for Oddamavadi". Ministry of Defence and Urban

Nine Arches Railway Bridge

Nine Arches Railway Bridge The Nine Arches Railway Bridge, also known as the Demodara Bridge, is an iconic architectural marvel located in the Ella region of Sri Lanka. Situated amidst the breathtaking

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Revisiting of Three Bridge Failures in Sri Lanka

This is now a popular form of bridge construction method in Sri Lanka for longer spans. In addition to above bridge types, steel truss bridges are also in existence in Sri Lankan bridge network and most

THE 15 BEST Sri Lanka Bridges to Visit (2026)

The Nine Arch Bridge in Ella is one of, if not, the most beautiful train bridge I have ever seen. The unique tourist hotspot that has shot to insta fame is on the Demodara loop and spans 91

Revisiting of Three Bridge Failures in Sri Lanka

Total Sri Lankan bridge net-work has approximately 11,000 bridges including classes C and D roads [1-3]. Masonry, steel and concrete are the major material usage for bridge construction in Sri Lanka.

Sri Lanka's First Extradosed Bridge

The document details the construction of Sri Lanka's first extradosed bridge over the Kelani River, funded by Japanese Official Development Assistance. The bridge, measuring 380 meters in length

Outline of the New Construction Project over the Kelani River

This Project is the largest bridge construction project in Sri Lanka. As a symbol of Greater Colombo region, it has a long-span extradosed bridge and advanced technical features.

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