

Bajrang Setu - India's First Cable Suspension Glass Bridge

1. Overview

- **Name:** Bajrang Setu
- **Location:** Rishikesh, Uttarakhand
- **Type:** Cable suspension bridge with glass flooring
- **Length:** 132 metres
- **Height above Ganga River:** Approx. 57-70 feet
- **Cost:** ₹68-70 crore (approx.)
- **Construction started:** 2022
- **Expected inauguration:** Late 2025
- **Full operational capacity:** Early 2026
- **Significance:**
 - India's **first cable suspension glass bridge**
 - **Second such bridge in Asia**

2. Design and Architectural Features

- **Architectural theme:**
 - A fusion of **modern engineering** and **spiritual symbolism**.
- **Twin Towers Design:**
 - Inspired by the **sanctum (garbhagriha)** of **Kedarnath Temple**.
 - One tower bears a **figure of Lord Kedarnath**, the other **Lord Badrinath** — symbolizing the twin spiritual heritage of Uttarakhand.
- **Materials Used:**
 - High-strength steel cables and reinforced glass panels.
 - Transparent glass flooring of **65-66 mm thickness** for pedestrians.

- **Structure:**

- Central deck designed to support **two-wheelers and light four-wheelers**.
- Side walkways for pedestrians with **glass panels** offering views of the Ganga below.

- **Aesthetic and safety features:**

- Anti-slip coatings and multi-layered tempered glass for safety.
- Night illumination to enhance the visual appeal and ensure security.

3. Engineering and Innovation

- **Structural Design:**

- Combines **cable suspension** technology with **glass walkway architecture**.
- Designed to withstand high wind pressure and seismic activity common in Himalayan regions.

- **Technological Integration:**

- Use of computer-aided modeling and wind tunnel testing for stability.
- Built using environmentally sustainable construction practices to minimize river pollution.

4. Cultural and Spiritual Significance

- Represents the **spiritual essence of Uttarakhand**, known as “Devbhoomi” (Land of Gods).
- Symbolizes the **connection between tradition and modernity** — blending ancient temple design with advanced engineering.
- Enhances **religious tourism** linked to **Char Dham pilgrimage** and nearby ashrams.
- Strengthens Rishikesh’s image as a place where **spirituality meets innovation**.

5. Location Advantage and Connectivity

- Situated near key attractions:
 - **Parmarth Niketan Ashram**
 - **Beatles Ashram**
 - **Lakshman Jhula (now closed)** and **Ram Jhula**
- Provides a modern alternative to older bridges, improving local **connectivity across the Ganga**.
- Aims to ease movement for pilgrims and tourists while boosting local trade and transport.

6. Tourism and Economic Impact

- Expected to attract **thousands of domestic and foreign tourists** annually.
- Promotes **eco-friendly and adventure tourism** (glass walk experience).
- Adds to Rishikesh's identity as the **"Yoga Capital of the World"**.
- Boosts local economy through hospitality, retail, and tourism sectors.
- Reflects Uttarakhand government's focus on **sustainable infrastructure** and **heritage-based development**.

7. Administrative and Project Details

- **Implementing authority:** Government of Uttarakhand (Public Works Department & Tourism Department).
- **Estimated cost:** ₹68–70 crore.
- **Funding:** State government with possible tourism and infrastructure development grants.
- **Project timeline:**
 - Initiated – 2022
 - Construction phase – 2022–2025
 - Completion and opening – End of 2025

8. Exam-Oriented Key Facts (For Quick Revision)

Parameter	Details
Bridge Name	Bajrang Setu
Location	Rishikesh, Uttarakhand
Type	Cable suspension glass bridge
Length	132 metres
Height above Ganga	57-70 feet
Construction Began	2022
Expected Completion	Late 2025
Cost	₹68-70 crore
Special Features	Glass flooring, twin towers inspired by Kedarnath Temple
Religious Depictions	Lord Kedarnath & Lord Badrinath
Tourism Impact	Boosts spiritual, adventure, and eco-tourism
National Significance	India's first and Asia's second such bridge

9. Possible UPSC Questions

Prelims (Objective Type)

1. *Bajrang Setu, recently in news, is located in which state?*

Answer: Uttarakhand

2. *Which of the following statements about Bajrang Setu is correct?*

- (a) It is India's longest rail bridge
- (b) It is India's first cable suspension glass bridge
- (c) It connects Rameswaram with the mainland
- (d) It is part of the Char Dham road project

Answer: (b)

3. *The design of Bajrang Setu's twin towers is inspired by:*

Answer: Kedarnath Temple

Mains (Descriptive Type)

Q. *Discuss the significance of Bajrang Setu in promoting cultural heritage and sustainable tourism in Uttarakhand.*

Approach:

- Introduction – Background and location
- Design and symbolic representation
- Role in tourism and local economy

- Technological innovation and sustainability
- Conclusion – Model for future heritage-based infrastructure

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