

## Gujarat Hardlook: Fault in our bridges

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The Jhulto Pul over the Machchhu River built in 1887 collapsed four days after it reopened following a seven-month closure for repair. The incident took place on October 30 last year during the Diwali holidays when crowds expectedly surged. Over 3,000 tickets were sold that day and around 350 people were on the bridge when it collapsed, killing 135 and injuring 56.

**Status:** Jaysukh Patel, Managing Director, Oreva Group — makers of famous Ajanta clocks — was named the prime accused besides two of his managers Deepak Parekh and Dineshbhai Dave, ticket clerks Mahadevbhai Solanki and Mansukhbhai Topiya, three security guards Alpeshbhai Gohil, Dilipbhai Gohil, and Mukeshbhai Chauhan, and Surendranagar-based Devprakash Solution's Prakash Parmar and his son Devang. All of them were booked under IPC section 304 (culpable homicide not amounting to murder) among others. The trial is at the stage of framing of charges. Tragedy Victim Association Morbi, a body which has family members of 111 deceased, in July, demanded the addition of the murder section against the accused. The Morbi trial court suggested while an association's demand would not have locus standi, such a demand can instead be made through an application by one of the witnesses who is an affected party (victim or a family member) mentioned in the chargesheet, according to advocate Narendrasinh Jadeja, appearing on behalf of the victims. In April, the state government issued an order superseding the municipality, following repeated raps by the HC. The state government underscored the civic body's repeated failures to maintain the bridge and treat it as its own property, adding it cannot absolve itself of its liability.

**What went wrong:** The bridge was handed over to Oreva Group for maintenance, operations, and management by Rajkot district officials in 2007 before Morbi was carved as a district. Probe details as well as submissions made before the HC by the state revealed the bridge remained in the care of Oreva in the absence of any contract or agreement for at least two months between December 2021 and March 2022. It was also revealed the company in December 2021 had informed Morbi civic authorities of the "critical" condition of the bridge. Despite the warning, the bridge remained open until March 2022 when Morbi municipality renewed its contract for operation and maintenance in favour of Oreva Group. According to a 2010 publication by Morbi municipality, there used to be a "law" permitting only 15 persons on the deck of the bridge at a time. However, on the day of the incident, more than 350 people were on the bridge when one of its steel cables snapped. Apart from the excessive weight, forensic analysis showed several cables were rusted despite the repair. Notably, the bridge opened before a safety audit was conducted and it did not have a fitness certificate. The probe also revealed private contractors engaged by Oreva Group did not conduct any "scientific assessment of structural stability".

### Mumatpura Bridge, Ahmedabad

In December 2021, a part of an under-construction overbridge at Mumatpura in South Bopal, an upscale area in [Ahmedabad](#), collapsed after one of the 113 slabs of the bridge fell through. The bridge was being built by the Ahmedabad firm Ranjit Buildcon, which bagged several contracts in Gujarat. While no one was injured, earlier two other bridge projects by the firm also witnessed accidents, one leading to a death in [Surat](#) in 2007. The company is also handling several other big-ticket projects for civic bodies of Vadodara, Rajkot, and Surat, besides the Ahmedabad [Gandhinagar](#) Metro Rail. The state government formed a high-power committee to look into the incident, and according to AUDA (Ahmedabad Urban Development Authority) deputy executive engineer Sanjay Patel, no quality issues were found. No [FIR](#) was lodged or departmental action was taken.

**What went wrong:** Gaurav Patel, MD, Ranjit Buildcon, said that during the stressing process, wires may have snapped due to likely mechanical or design failure.

### Atal Bridge, Vadodara

Multiple cracks were spotted along the 'covering wall' of the ramp of the 3.5-kilometer-long Atal Bridg in Vadodara. This was just months after its December 2022 inauguration. Built by Ranjit Buildcon Limited, it was claimed to be the longest flyover in a Gujarat city.

The Vadodara Municipal Corporation (VMC) issued a public notice in May, asking citizens to "drive slowly" for a month saying it was "seal-coating" the asphalt concrete road for maintenance. Citizens groups submitted a memorandum to Municipal Commissioner [Dilip Kumar](#) Rana to stop the resurfacing, citing fear of "fatal accidents".

**What went wrong:** The VMC decided to 'remove' the walls. Ravindrakumar Pandya, VMC Executive Engineer of the project, told [The Indian Express](#), "These are not structural walls but just covering walls without foundation that were made in order to keep the area clean. Following the controversies that were purposely created, we decided to do away with the wall for everyone's satisfaction."

**Status:** Pandya added VMC routinely undertakes audits of bridges and flyovers. "We are routinely monitoring the structures, right from the oldest bridge — the Kala Ghoda bridge on Vishwamitri River — to the newly-built Atal Bridge. Currently, all bridges in the city are in good health," he stressed. VMC Chief City Engineer Alpesh Majmundar added that to maintain transparency about the quality, the VMC has also uploaded the "guarantee period" of roads on the website.

### Railway Overbridge, Valsad

Portions of a railway overbridge in the Sanjan Railway over the bridge in Valsad saw damages and chunks of concrete falling on June 15. Videos were widely shared on social media. Built by Ankleshwar-based Mangalam Builders at the cost of Rs 50 crore, the bridge was to be inaugurated this year.

**What went wrong:** Valsad district officials blame "heavy rainfall" for the damage.

**Status:** According to [BJP](#) MLA from Umargam Ramanial Patkar, officials and the contractor firm were immediately instructed to repair the same. "It has been repaired and officials have examined the entire bridge and found no other damage. The bridge will be inaugurated soon," he said.



A newly built bridge on Mindhola River collapsed in Tapi in June.

### Hatkeshwar Bridge, Ahmedabad

In a first-of-its-kind decision, Ahmedabad Municipal Commissioner (AMC) M Thennarasan announced in April the demolition of the Hatkeshwar Bridge. It was built at a cost of around Rs 44 crore, and opened to the public in November 2017. It was closed in August last year after four instances of damage on the bridge surface, and a defect in the fundamental structure were reported.

The bridge was built by the Mehsana-based private firm Ajay Engineering Infrastructure Private Limited (AEIPL) and project management consultant (PMC) SGS Private Limited. The AMC had also initiated departmental inquiries against eight of its engineers who were responsible for the supervision of the project. Four of them were suspended, and three were retired while another was on contractual service after a team of experts ruled that the quality of material was severely compromised by the contractor conspiring with the PMC. AMC decided to demolish and reconstruct the bridge after recovering the cost from the accused firms. An FIR was also lodged at the Khokhra police station.

**Status:** The demolition will happen once the police investigation is over, say AMC engineering officials. Seven of the accused have been arrested and are in judicial custody including four directors of AEIPL — Ramesh Patel, his sons Kalpesh and Chirag, and another director Rasikbhai Patel and three from the PMC firm, namely Pravinbhai Desai, Bhailalbhai Pandya and its branch head Neelam Patel. In May, SC refused to grant anticipatory bail to four directors of AEIPL after HC too had refused them relief while observing "the possibility of connivance/ collusion of the officers and employees of the Municipal corporation cannot be denied at this stage." A charge sheet remains to be filed. Meanwhile, AMC suspended another Rs 104 crore split flyover project with AEIPL, and is "in process of blacklisting the firm", though there seems no move yet, three months since the FIR.

**What went wrong:** AEIPL told the HC the bridge's quick deterioration was owing to "plying of special purpose and multi-axle vehicles" despite the design not being fit for the same. AEIPL says the design of the bridge was made by another firm and approved by road and buildings department. AMC and the state, however, cite unsatisfactory quality of concrete.

### Mindhola River Bridge, Tapi

The middle portion of the newly built 100-meter bridge on Mindhola River in Tapi district collapsed on June 14. No casualties were reported. It was built under the 2017-18 Mukhya Mantri Gram Sadak Yojana. CM [Bhupendra Patel](#) ordered an inquiry into the incident. The bridge was yet to be inaugurated.

**What went wrong:** A slab collapsed. Investigations are on and the real reason is yet to be determined. The construction work of the approach of the bridge is still in progress. Through tender procedures, the work order was given to Akshay Construction at Rs. 1.84 crores on February 5, 2020. Surat-based Green Design and Engineering was involved in designing. As per the terms and conditions, the work was to be finished in 11 months. The agency, however, requested a deadline extension, and May 30, 2022, was the new date. The bridge that was earlier at the site did not have the required height. During monsoon, it got submerged with water levels rising in the river, said locals, bringing difficulties for people in the area.

**Status:** Sources said that after primary investigation, three officials — deputy executive engineer Nirav Rathod, assistant engineer Ritesh Chaudhary and executive engineer Nikhil Panchal — were held responsible for the collapse and they were immediately suspended. Surat-based Akshay Construction has been blacklisted for using substandard concrete, according to Tapi District Collector Vipin Garg.

### Variyav Bridge, Surat

On June 28, just 42 days after the bridge built on the Tapi River was virtually inaugurated by CM Bhupendra Patel, cracks appeared. AAP councillors raised the issue, after which Surat Municipal Commissioner Shalini Agrawal suspended the technical assistant of the bridge cell, and issued show cause notice to the supervisor.

**What went wrong:** The bridge was built at a cost of Rs 118 crore and the damage was found on the bridge following the first spell of rainfall in June.

**Status:** On July 14, contractor Vijay Mistry and the Project Management Consultant (PMC) Geo Designs and Research Pvt Ltd were blacklisted by the SMC. Standing Committee,

### Shastri Bridge, Ahmedabad

After citizens flagged cracks on the Shastri bridge over the Sabarmati River earlier this year, heavy vehicle movement on the bridge was restricted. Under the jurisdiction of the National Highways Authority of India (NHAI), a height barrier was placed on the bridge in June with an Ahmedabad city police advisory adding the barrier would remain until December 31. The barrier, however, was broken within 24 hours of being put up and heavy vehicle movement continued unfettered till the barrier was reinstalled.

Status: Over 40 years old, Shastri Bridge is one of the 11 bridges over the Sabarmati River in Ahmedabad. The repair work is yet to start with the firm selected through the tendering process. According to an NHAI official, the repair work is expected to begin post-monsoon.

What went wrong: An official familiar with the matter said, "The Shastri Bridge hasn't received any major upgrades to prolong its lifespan in over 15 years."

### Ticking time bomb

Cautioning a repeat of a Morbi-like collapse, a resident of Gondal town this year moved the HC with a public interest litigation. The PIL raised alarm over the Gondal River Bridge and Sardar Bridge and sought the court's directions to the state government to depute experts to physically examine these 100-plus years old bridges.

In June, the HC while remarking it does not want a repeat of an "unfortunate incident" like the Morbi bridge collapse, directed the state to "depute experts to physically examine the bridges involved" and to file a status report in this regard before the court.

Status: In a report submitted by the state government before the court after a committee was formed, it was concluded that "significant signs of deterioration, including cracks, weathering effects and compromised structural elements" have been observed which pose "potential risk" to both the bridges' "serviceability and functionality." The report warns that "such types of bridges will not show any sufficient warning before failure". The committee has gone on to recommend that the bridges be immediately strengthened and that "only light motor vehicles and two-wheelers be permitted to ply over the bridge and restriction of the height barrier be placed". Advocate Rathin Raval, who represents the petitioner, says that the repair work has not started and restrictions have not been imposed.

### Old but gold

In Ahmedabad, of the 84 bridges — which include 19 flyovers, 24 railway overbridges, 20 railway underbridges, 11 river bridges, seven canal box culverts, and three minor bridges — there are 18 bridges that were built before 2000. Of these, the oldest ones are the Kalupur railway overbridge built in 1875, and Ellis Bridge built in 1892. "Older bridges were made of steel but steel prices rose and concrete or cement got cheaper and was easily available in government supply, becoming the choice of material for construction," stressed Jignesh Shah, Deputy Engineer-in-charge of bridges, AMC. Among one of the oldest bridges over the Sabarmati River is the Subhash Bridge built in 1973. "For the first time in 70 years, in 2020, the bridge underwent a major overhaul. We basically lifted the 3000-tonne bridge with hydraulic lifts and changed the bearings and now this will sustain for another 50 years. We did the same with Nehru Bridge (also a river bridge over Sabarmati) in 2021. Nehru Bridge was built in 1962. This does not mean that these bridges will not require periodic inspections," said Shah Kalupur Bridge last underwent major repairs in 2015 and reinforcements are again being done this year, added Jignesh. (With Inputs from Kamaal Saiyed, Aditi Raja, & Rijit Banerjee)