

Why Infrastructure Quality is more Important than Quantity



NO DOUBT THERE HAS BEEN a huge expansion in Indian infrastructure stock. This has also been appreciated globally. But, the continuous occurrence of structural shortcomings, even during the early days of a project's delivery, is a matter of grave concern. Incidents of surface slippage, cracks, subsidence and potholes have been reported widely in the mega-budget, newly commissioned Lucknow-Kanpur Expressway and Ganga Expressway, and earlier the Delhi-Dehradun and Delhi-Mumbai Expressways. All of them had been inaugurated with spectacular fanfare. The monetary loss may be counted in crores, but the ensuing trust deficit between citizens and the government is profound.

Vikramshila Setu Near Bhagalpur

On the night of 3 May 2026, a 33 metre slab of the Vikramshila Setu near Bhagalpur gave way in two stages, splitting a 4.7-kilometre structure into two and cutting off the shortest link between south and north Bihar. Commuters were forced onto a 161-kilometre detour, then onto boats, until the Army and the Border Roads Organisation could throw together a Bailey bridge. A key part of the Aguwani to Sultanganj bridge collapsed, not once, but three times — in three consecutive years, between 2022 and 2024. In May 2025, a reinforced earth (RE) wall failed on the Ramanattukara-Valanchery stretch of NH-66 in Kerala as the project neared completion. In August 2025, a hundred-metre protection wall on the Chakki bridge corridor between Himachal Pradesh and Punjab — built some months earlier — came apart. Two months later, a 9.4-metre RE wall approach to a vehicular underpass collapsed at Mylakkadu on NH-66. In April 2026, the carriageway settled near an RE wall underpass on NH-32 in Tamil Nadu.

Even the Railways have their share of problems, only fewer because they have, over several decades, built better systems of quality assurance. The recent collapse between Thakurwadi and Monkey Hill on Central Railway's (CR) Bhor Ghat sec-

tion caused unprecedented damage. Nearly 50-60m of railway line between the two locations was washed away, leading to the cancellation of around 30 trains.

Not Scattered Bad Luck

These are not cases of scattered bad luck. The causes for such breakages can be identified as: inadequate geotechnical investigation, ground improvement measures that were skipped, drainage provisions that cannot cope with monsoon saturation, reinforced-soil wall technology deployed in terrain that it was never suited for, and a supervisory architecture so diffused between designers, concessionaires, independent engineers and NHAI's own field staff that when something goes wrong, no one is quite sure whose failure it was.

It is tempting to treat each collapse as a local story — a bridge here, a wall there — and move on once the debris is cleared. Every rupee spent rebuilding a wall, a carriageway or a bridge span that should never have failed in the first place, is a rupee not spent creating new infrastructure or maintaining what al-



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ready exists. It is also a rupee spent twice — once to build and then once to rebuild. Add to this the indirect costs like diverted freight, lost productivity from hours-long detours, the fishing boats now doing the work bridges were meant to replace. Most importantly, the slow erosion of the government's own brand.

The Technical Backbone of Projects

Industry voices will point to the incentive problem instead of the genuine technical one: that quality suffers because government tenders are awarded to the lowest bidder — that nobody is willing to spurn this for fear of scrutiny from auditors and investigative agencies. It is indeed true that contractors who win projects with unsustainably low bids have only one place to recover margin — by cutting corners on materials, ground investigation, and workmanship — the very inputs that determine whether an RE wall or a bridge survives its first monsoon. Sometimes, sub-contracts are made to other parties that have the acumen to martial huge legal claims to compensate for the shortfall. But that alone is not good enough reason.

Detailed Project Reports and ground assessments are the technical backbone of every project. Often they are rehashed from earlier projects with little adaptation to the specific geology, water table or flood history of a new site or are mere desk-top reports. Independent engineers, whose function is to catch these gaps before concrete is poured, often lack either the experience, authority or incentive to hold up a project over what appears to be trivial — an incorrect soil report, an imperfect alignment or design issue. They are prone to be inefficient and poorly-staffed when selected on low bids. After a structure is built, transfer of ownership leaves the project with successor agencies, not always well-versed with the past problems encountered by that project during its construction.

The remedies are neither exotic nor expensive relative to the losses at stake. In-



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dependent, mandatory design vetting is a must for RE walls and bridge structures, informed by confirmatory soil investigation and at least a decade of monsoon and flood data rather than routine DPR-stage assumptions. Field and laboratory testing of settlement and drainage at defined milestones are needed, not left to visual inspection. Deterrent accountability for design consultants is required when their geotechnical assumptions turn out to be wrong. Empanelled, technically qualified specialist agencies for RE wall execution should be deployed if the original contractors lack that expertise. A structural-health monitoring and maintenance regime is necessary for the thousands of bridges and walls already standing. A well-built structure left unmaintained for two decades will fail just as surely as a poorly built one does after its opening.

Eligibility and Qualification Bar

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Most critically, India should stop taking pride and glorifying the speed of building infrastructure. Beyond optics, in deference to our *Viksit Bharat* goal, we should, instead, find satisfaction in quality over quantity, durability over appearance and effectiveness over expediency. **BW**

The author is a former Secretary, GoI and a former Chairman, NHAI