



# The restoration of the Mangi Bridge, Red Fort, Delhi Press cuttings July 2010

## British come back to restore bridge they built

Richi Verma | TNN

New Delhi: A British firm has been roped in by Archaeological Survey of India (ASI) to help in the conservation and repair of Mangi Bridge. The century-old monument built by the British — connecting Salimgarh Fort and Red Fort — was damaged as heavy traffic movement underneath scraped off the inner arch of the structure.

A team of 15 engineers from UK-based firm Cintec — known world over for its patented anchoring system — has been specially brought in from Newport for the task, along with four expert drillers. While the work normally takes up to three months, Cintec officials said they had been requested by ASI to work on a tighter deadline in view of the Commonwealth Games in October. The firm is thus targeting to wrap up the work — that started less than one week ago — within a month.

Said a senior ASI official: "This is a new technology which has not been used in a Delhi monument till now. As part of this, the structure, without being dismantled in any way, will be anchored with steel bars to strengthen it. After the restoration of Mangi Bridge, we are contemplating using the same technique for structural strengthening of a tomb across



RESTORING LOST GLORY: A team of 15 engineers from a UK-based firm has been specially brought in from Newport for the repair and conservation of Mangi Bridge



Photo: Papati Malik

Delhi high court, where Delhi Metro is constructing an underground parking lot."

Abhishek Singh, project manager for the firm in India, said: "First, we carry out a structural analysis of the monument to identify the weak points and causes behind these. Accordingly, we decide on the anchoring design. To strengthen the structure we use two components — stainless steel rebars and grout."

For this bridge, the firm fol-

lowed the same method and found several weak points caused as a result of heavy vehicle movement and vibrations. "The bridge was consolidated after which we brought in the steel enforcements. Following this, we will be recreating the lost portions to maintain the originality of the bridge and then strengthen it with a stainless steel backbone."

While Cintec has been associated with several such projects worldwide, in India this is

the first time the firm is working on heritage buildings. The work portfolio of the firm includes Egypt's pyramids, Hibbs Temple and also Buckingham Palace. The company has also been identified by Indian Railways for work on their arched bridges. "We have been asked by the railway board to help in the instrumentation of bridges to assess their preparedness for increased load," added Singh. Besides working on strengthening a bridge near Lucknow

for Northern Railway, Cintec was approached by CPWD a few years ago to make the residence of Chief Justice of India more earthquake resistant.

Several months ago the bridge was found to have suffered heavy damage because of overloaded vehicles plying underneath. PWD had agreed to realign the road to ensure all heavy vehicles pass under the highest point of its arch to prevent any further damage after repair work was completed.

The bridge is located on a highway that caters to a high number of heavy vehicles on a daily basis. Earlier, ASI had requested the traffic police to change the route taken by heavy vehicles but were told that it was not possible as it was a highway. "Another major problem is the relaying work carried out by civic agencies every year which results in increasing the road level by several inches," said an official.

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HINDUSTAN TIMES, NEW DELHI  
FRIDAY, JULY 23, 2010

# Mangi Bridge to get a facelift

**FINALLY** ASI expects to finish renovation within a month, project delayed by a year



■ Experts from the UK engaged in preserving the Mangi Bridge.

VIPIN KUMAR/HT PHOTO

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**NEW DELHI:** The Archaeological Survey of India (ASI) has started renovating the British-era Mangi Bridge and has said it will refurbish it within a month.

The monument, near ISBT in the Kashmere Gate area, was 'adopted' by the ASI a year ago.

"The bridge had been damaged due to collisions with goods carriers and other heavy vehicles plying below it," said a senior ASI official, requesting anonymity.

The ASI had decided to renovate the 200-year-old bridge that connects Salimgarh Fort on the east

and the Red Fort on the west on July 14, 2009 — a week after it had given way for the third time in three months.

"The work was held up because we were looking for a technology to strengthen the monument from inside instead of merely reinforcing it from outside. For this, we have roped in two private construction firms after a study on this subject was conducted at IIT-Delhi," the official told *Hindustan Times*.

The ASI will use the 'zero abrasion' method to renovate the colonial structure that overlooks the busy Ring Road. "To renovate the monument, we will use what is referred to as the anchoring and stitching method.

Diamond-cutters will be used to drill stainless steel wires inside crucial locations in the monument. This will be locked not only with stones but also mortar to provide longevity to the structure," said the official.

Three British drilling experts will be providing their expertise to the project.

"In addition to two private firms, three experts who have been flown from England will be working at the site. They will provide structural engineering and drilling expertise to the project," the official said.

"The work should be complete in about 30 days, well before the Commonwealth Games," the official added.



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