

Metro miracle: Critical Begumpet link in place

Pics: VenkatRao M

Engineering Marvel On Corridor III

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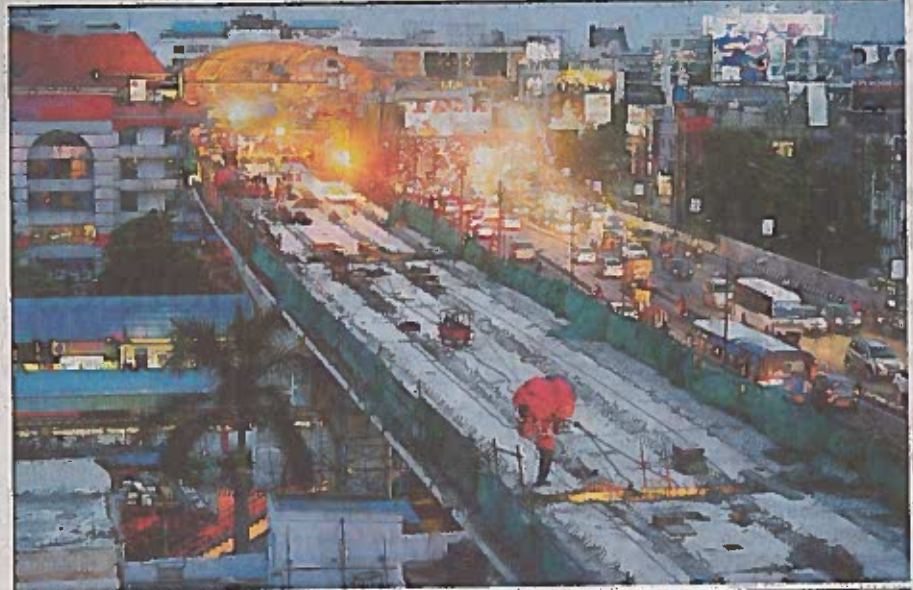
Hyderabad: A crucial link in the Metro Rail corridor III (Nagole-Shilparamam) — Begumpet road over bridge (RoB) — was completed on Saturday, paving way for extension of the Nagole-Mettuguda section up to Begumpet. With the critical viaduct on the corridor III over railway lines and Begumpet railway station complete, the extension of the 8-km stretch of Nagole-Mettuguda up to Begumpet has now become technically feasible.

The Begumpet RoB, one of the trickiest construction sites which was termed an engineering nightmare by the Metro rail authorities, has been built in three parts with the main portion (span) over the railway lines and railway station being 213-foot long and both ends being 130-foot and 107-foot long respectively.

Also, it was done under challenging conditions with busy railway lines, round-the-clock train movement and a large number of passengers using the station.

There are eight locations on the Metro network where the viaduct cross over railway tracks. Of the eight, Oliphant and Alugaddabavi (both on corridor III) were the most challenging tasks for Hyderabad Metro Rail Limited (HMRL) engineers. "Alugaddabavi Metro bridge has been completed recently, while the crucial and the most-challenging Oliphant RoB will be ready in another month," Metro authorities said.

Apart from these two bridges, which are the only steel bridges with no pillar support for 82 metres and 76 metres respectively, Begumpet RoB was a huge engineering challenge. The Begumpet



THE ENGINEERING FEAT

- ▶ Length | 450 ft ▶ Height | 60 ft
- ▶ Central span over railway tracks | 213 ft
- ▶ End spans | 130 ft & 107 ft
- ▶ Weight of each segment | 54 tonnes
- ▶ Length of Bridge Builder | 130 ft
- ▶ Other tricky spots on Corridor 3
- ▶ Oliphanta bridge | 82m
- ▶ Alugaddabavi bridge | 76m

Both are steel bridges with no pillar support

CRUCIAL LINK: The Begumpet Metro bridge that arches over the Begumpet railway station and rail lines and curves between the Begumpet flyover and buildings like the Country Club and White House on the left

pet RoB, which has a length of 137 metres and in a curve, is wedged between the Begumpet flyover on one side and several buildings on the other.

"A special device, 'bridge builder', which weighs around 100 metric tons was used for the RoB given its curved nature, long length and 60 feet height. Heavy-duty cranes were used to lift pre-cast segments without causing disruption to the continuous movement of trains, station operations, passengers and road traffic," HMRL managing director NVS Reddy said.

The Begumpet RoB has taken nearly a year to be completed, while the Oliphant Metro bridge has been underway for a couple of months now. Since only the

railways has the expertise to build bridges with a span (bridge suspension without support) of 80 to 120 metres, engineers from the South Central Railway (SCR) were supervising the construction work.

To keep construction time at the site minimal, the entire steel bridge, weighing about 1,100 tons made of special high grade steel, was first manufactured and assembled at a factory in Ghaziabad, simulating the site conditions near the Oliphant bridge, and later it was dismantled piece by piece and brought here for reassembling.

Since the Oliphant bridge is a double-elevation RoB over an already existing elevated one, and keeping in mind the need of accommo-

dating future double-decker trains, the bridge is being built at a height of 60 feet from the road level. Operations on the route might take a while to begin.

The Metro rail authorities have recently decided that of the two completed metro stretches (Miyapur-SR Nagar and Nagole-Mettuguda), they would begin operations on the 11-km Miyapur-SR Nagar segment first. based on the experience, the Nagole-Mettuguda-Begumpet route would be made operational.

The HMRL, meanwhile, has got an extension till November 2018. As per the original agreement, July 4 was the deadline for the 'concessionaire' Larsen and Toubro (L&T) to complete the three corridors.