

Work On Shafts, Which Will Accommodate Tunnel-Boring Machines, Picks Up Pace

Metro rail gears up for tunnelling work

TIMES NEWS NETWORK

Chennai: A huge crawler crane sits at the edge of a wide shaft deep enough to swallow a five-storey building. Its operator has his eyes fixed on a machinery manager. For the next few hours, the manager guides the operator as he pulls huge steel girders out of the shaft to accommodate two tunnel-boring machines at the metro rail work site at Nehru Park on Poonamallee High Road.

The girders, weighing a few tonnes, are being removed from the shaft into which giant tunnel-boring machines, weighing approximately 400 tonnes, will be lowered two months from now.

Work to launch tunnel-boring for the Chennai Central-Koyambedu stretch of the Chennai Central-St Thomas Mount corridor has picked up pace. "We are re-



IN PROGRESS: At the site where Nehru Park station will be built, work on the shaft is under way

moving the girders and columns that supported the walls of the shaft because the concrete is set and the walls are strong enough. A one-metre thick basement slab, which can bear the weight of the tunnel-boring machine, is being concreted. We have also marked the lo-

cation from where the machines should start boring," said a metro rail official.

The type of construction chosen is determined by the type of soil and water level. The rocky soil underneath Poonamallee High Road has forced engineers of Larsen and Toubro (L&T), which



A Prathap

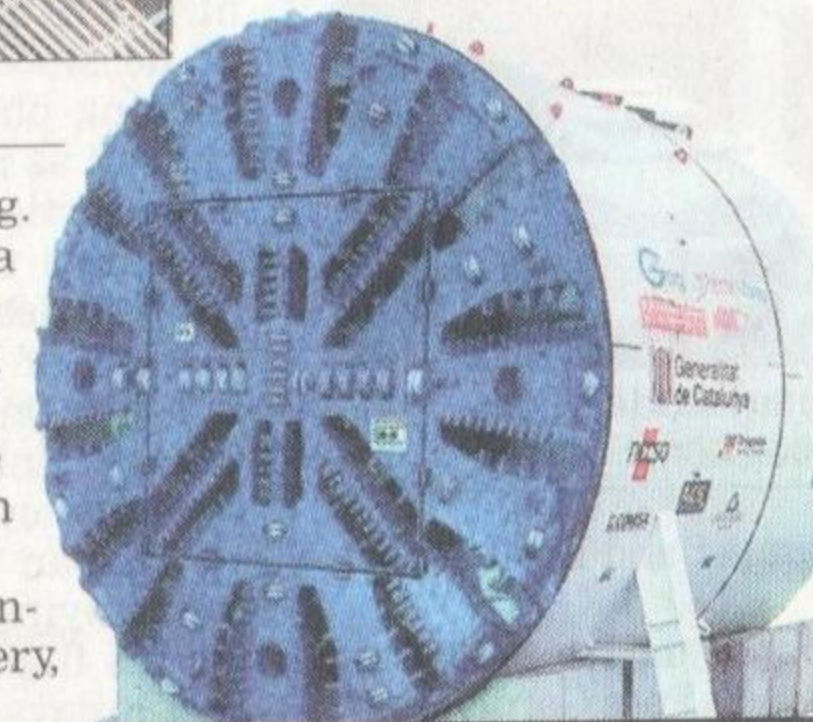
sophisticated machines are used to check vibrations on nearby buildings where tilt metres, crack metres and building settlement markers are placed. "Our officials check these instruments regularly to find if there are any changes. An online monitoring system is also implemented by which impact on buildings is monitored at a control centre at the main site office of L&T," said an engineer.

has the contract to build underground stations and tunnels at Nehru park, KMC and Pachaiyappa's College, to adopt a "bottom up" method to build the shaft.

"Building underground stations at Udyog Bhavan and Green Park in Delhi was a cakewalk as the soil was easy

to cut open and dig. Here, it is rocky at a depth of 13-17 metres in some places and sandy in other places and the water table is also high," said an engineer.

As the works involve huge machinery,



SETTING THE STAGE

▶ Shafts wide enough to accommodate two tunnel boring machines are being built at either end of Nehru park underground station

▶ The shaft has concrete walls on four sides to shore up the earth and a 1 metre thick basement slab to hold the weight of 400-tonne machines

▶ Two 90-metre-long tunnel boring machines will be lowered into the shaft using a crane

▶ From one end of the shaft at the Nehru park station, the boring machines will tunnel towards Egmore

▶ Pits will be dug along the Poonamallee High Road to remove the debris expelled by the machines

▶ From the other end of the shaft, two more tunnelling machines will bore towards Kilpauk Medical College (KMC)

▶ Once the tunnelling is over, the machines will be taken out and lowered into another shaft at the site of KMC underground station to bore to Pachaiyappa's College station