

# Vertical exhaust system cuts length of underground metro stn by 40%

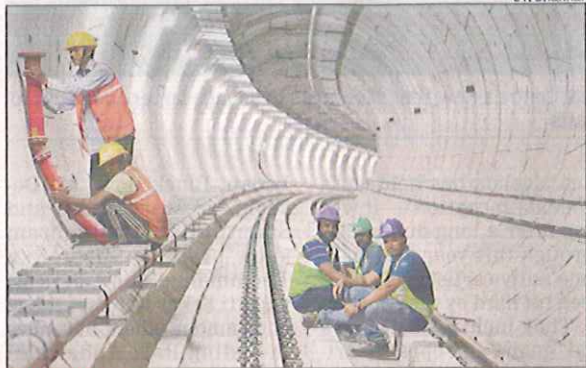
TIMES NEWS NETWORK

LR Shankar

**Chennai:** A vertical ventilation system with a capability to draw out smoke and inject fresh air into tunnels has been installed in an underground station in north Chennai metro rail line to reduce the length of the station by nearly 40% to save cost and time on construction and maintenance.

Of the two underground stations on the 9km phase-1 extension line, officials said Theagaraya College metro station has been built with a vertical tunnel ventilation system that saved 90m of the space and brought down station size to a compact 150m compared to an average 240m-long phase-1 station. The 9km line from Washermenpet to Wimco Nagar, which has two underground stations and six elevated stations, is expected to open for public in January 2021. Following phase-1 extension, 128 stations in the 118.9km phase-2 will also be compact including 48 underground stations, which will be sleek and deep to fit under narrow roads.

CMRL officials said they have installed horizontal ventilation fans in the underground stations in phase-1, which require 90m space, making stations to an average 240m in



**SHAPING UP:** A file photo of a north Chennai metro tunnel

length. "India's first vertical tunnel ventilation fans have been installed in Theagaraya College metro underground station," CMRL said in an on-line post. While several modifications have been made to reduce the size of the station, the size of platforms is same as those in phase-1 stations, which is 14m to accommodate a six-car train.

The systems include a giant blower-cum-exhaust fan that can draw smoke during fire accidents inside tunnels and also bring in fresh air from outside into the tunnels. In phase-1 stations, two tunnel ventilation fans have been installed on either side of the stations closer to ventilation

shafts jutting out around 14m out from the surface. Each underground station has eight such ventilation shafts.

The modifications to the size of the station was made based on the experience CMRL had during the design and construction of the 45km phase-1. Officials said all stations in phase-2 will be smaller as phase-1 extension stations by making modifications to the space occupied by auxiliary systems like rooms for electricals, communications, control and ticketing. "We would play around with the length, breadth and the height of the non-passenger area. Size of platforms will remain the same," an official said.