

80 OF 128 STATIONS IN METRO PHASE-2 TO BE BUILT ON COLUMNS ABOVE CITY ROADS

IN A NUTSHELL

Phase-2 line structures could be as high as a 11-storey building

STATIONS IN THE SKY

SECOND PHASE

- Length 118.9km
- Budget ₹69,000 crore
- Corridors 3
- Elevated stations 80
- Stations 128
- Length of elevated corridor 76.3km
- Size of elevated station 140sqm X 21.95sqm

THE METHOD

- > In balanced cantilever method of construction, the structure stands with support of columns only on one side
- > The stations will rest on piers built on the centre median of the road
- > The station will spread out on either side of the road on the single row of columns and its staircases will project out on either side connecting either ends of the road
- > Hyderabad metro rail was the first use the method and build 63 stations
- > Chennai metro rail will have six cantilever-type stations to link a 7km stretch from Tondiarpet to Wimco Nagar

Illustration: Shinod Akkaraparambil



A DESIGN SO FUTURISTIC: The design is aimed at minimising land acquisition, time and money spent on construction

U. Tejonmayam@timesgroup.com

By 2025, when a portion of the phase-2 line of metro rail opens, commuters will enter a futuristic world. Trains will zip out of compact elevated stations that have sprouted out of columns that run along the centre of the road. The structures will be as high as a 11-storey building at about 24m to 40m. Commuters can watch an aircraft take off from Alandur metro station or quickly catch a glimpse of the surrounding neighbourhood before they board a train. The design is aimed at minimising land acquisition, time and money spent on construction.

Chennai Metro Rail Limited (CMRL) has planned cantilever-style stations that will be smaller than the existing stations in phase-1 making it easy for commuters to walk around. The sta-

tions will rest on a row of columns built on the centre of the road. The structures will have two arms touching either side of the road to serve as entry points for commuters.

“Unlike phase-1 where stations were built with the gateway projecting on one side of the viaduct and the station box on it, in phase-2, stations will project from the pier itself,” an official said.

Eighty of the 128 stations in phase-2 will be elevated. Construction for a 52km priority corridor from Madhavaram to Sholinganallur and Madhavaram to CMBT will begin first by

AN EASY APPROACH

early 2020 and be completed in five to six years. Of the 57 stations in the priority corridor, 16 will be elevated.

A metro rail official said while most of the elevated stations would be at a height of about 24m, corridor-5 between Madhavaram and Sholinganallur will reach a maximum height of 40.4 m when it runs above the existing two corridors of phase-1 over the Kathipara grade separator. “The elevation of the proposed corridor-5 is 40.4, which is within permissible elevation of air funnel zone. The station is proposed on the left side

of existing station on land reserved for metro,” said the detailed project report of Phase-2.

Stations planned between Alwarthirunagar and Porur junction will have a maximum height of about 27m, as two corridors will be built, one below the other. Five stations are planned between Alwarthirunagar and Porur junction, which will be an intersection of corridor 4 and 5.

“It is still under planning and design stage. The corridors may either be one below the other or one next to the other depending on the space and the design,” the official said. In phase-1, the maximum height of the elevated structure was 21m, which was built above Kathipara grade separator in Guindy.

In phase-2 stations, passengers can climb up sleek sets of stairs or take an elevator to the ticketing level that will be at about 8m height. Peeking from the ticketing level, commuters can view the bustling road under them and the rest of the neighbourhood before climbing a level up after swiping their smart-cards to board trains that run at 23 to 27m altitude. “In some stations, we have plans to do away with concourse level, but it is yet to be finalised,” an official said.

ADVANTAGES

- > Saves space and reduce land requirement for construction
- > Sleek stations can be built on narrow streets
- > Space required during construction will be less and not cause much traffic chaos
- > Has aesthetic appeal
- > Will not limit expansion of roads as the columns supporting the structure is at the centre

“ Unlike phase-1, stations will project from the pier itself in phase-2

A CMRL official