

India's deepest Metro station at Howrah also to be the largest

Covers 54k Sqm
30.5m Below
The Surface

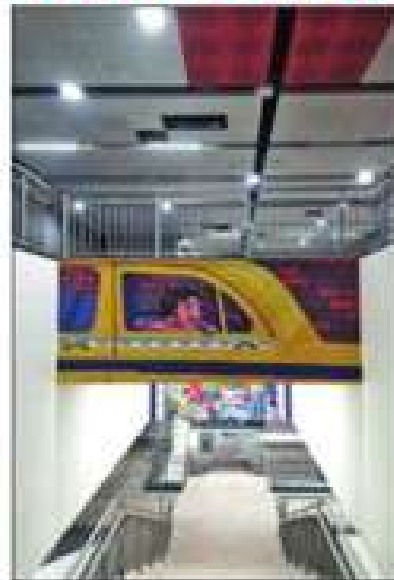
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Howrah: The East-West Metro station at Howrah, embedded in the country's busiest rail terminal, is set to be India's largest Metro, apart from being the deepest one.

Achieving the engineering marvel (of building a station equalling a 10-storey building) was sheer compulsion. The station had to be 30.5m deep to get aligned with the 40m deep under-river tunnels. Also, since the expected footfall here is a whopping 43,065, which, as per engineering formula, requires a total floor area of 54,000 sq m. The station at Howrah and the other stations dotting East-West Metro's ready-for-launch 4.8km Esplanade-Howrah Maidan section were designed according to a RITES' survey on "peak hour direction traffic".

"The projected peak-hour data is a design criterion. It determines the size of a station. When East-West Metro covers its entire 16km across Howrah Maidan and Sector V, we expect the daily passenger count to be around 7.5lakh between Esplanade and Howrah Maidan. Howrah Metro station should register the highest

ENGINEERING MARVEL



The theme of the Howrah station is 'gateway to Kolkata'. The base colour of the station is red

passenger count," said Tama Biswas, project manager of Afcons, which has built 3.8km of the Esplanade-Howrah Maidan stretch, including the 520m river tunnels.

Compared to Howrah Metro station, the projected hourly footfall of the terminal Howrah Maidan Metro station is only 4,666. The station covers 18,000 sqm. Mahakaran, with an expected 24,418 hourly passenger count in rush hour, has been built on 26,000sqm. The Esplanade Metro station covers 30,000sqm, where the "peak hour traffic" is expected to be around 38,000.

"Being the deepest, Howrah Metro station features five distinct levels (four concourses and platform), covering 54,000 sqm, designed thoughtfully as per need of the time, offering seamless facilitates, barrier-free vertical and horizontal accesses, linking the railway station's old and new complexes through four entrances and an underground subway," an official of Kolkata Metro Rail Corporation (KMRC), the implementing agency of East-West Metro, said.

"The Metro station was adjusted to a level where the tunnels could effortlessly navigate the river stretch

30m | Depth of Howrah Metro station, equivalent to 10-storey building



54,000sqm | Total area of the station



7 Lifts

43,065 | Expected peak-hour footfall



4 | Accesses the station has



28 Escalators



200 Ventilation fans



27 Staircases



3.5 lakh litre | Reservoir capacity for firefighting



with minimal undulation. This adjustment required deeper excavation, resulting in the station's increased depth of 30m," explained Biswas.

Building the deepest and largest station inside a live railway station, which caters to 10.5 lakh passengers every day, was in itself a huge challenge. "The massive Metro construction activity didn't impact railway operations (around 250 mail/express trains and 500 locals run through Howrah station daily) even for a day," said Biswas. "Challenges posed by aquifers (linked to the river) and the old underground brick sewer line were managed with cutting-age technologies by Afcons," he added.

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