

# IN JULY, US, UK, CHINA SUBWAYS FLOODED BUT METRO IS WELL-PREPARED FOR RAINS

The flood-prone city has begun to find space underground for its commuting needs with the Metro 3 project. As the corridor is up to 30 metres below the road, **Manthan K Mehta** digs up what safeguards are planned for the wet months

The underground Metro 3

## THE VULNERABLE POINTS

- > Metro station entrances
- > Lift openings
- > Openings for fresh air to come in or exhaust for stale air
- > Stations near river, water line and sea
- > Any station or opening at spot where topography is conducive to water accumulation in rains (eg, Mumbai Central and Mahalaxmi)



## KEEPING WATER OUT

- > Plinth levels of station entrances, lifts and other openings at minimum 1,200mm above road level
- > Manual flood gates at all entrances and automatic flood gates at lift locations. Flood gates 500mm above plinth level of station
- > Each station has underground water holding tank and a system of drains, besides automatic pumps

## SAFETY OF TUNNELS

- As opening in the metro tunnel is from the ramp side, from where the train will enter the underground level, there is an elaborate network of drains to take care of water from surface runoff from higher areas



Recent flooding in Zhengzhou (China)



- Big sumps in the ramp are specially designed to trap the rainwater that falls directly over it

“Mumbai is different from other cities, but our measures are good enough to minimise the risk of flooding”  
**SK Gupta** | DIRECTOR (PROJECTS), MMRC