

METRO
CUBE

ADDING NEW DIMENSIONS



MD SPEAKS

Ms. Ashwini Bhide, IAS

I am very happy to share the good news of the green signal given by Hon'ble Bombay High Court, on May 5th, 2017, that vacated the stay on cutting of trees for Metro 3. Further, Hon'ble Supreme Court also upheld the Hon'ble High Court orders and dismissed the Special Leave Petition filed by the petitioners.

Hon'ble High Court has comprehensively addressed the matters of need of the project for city of Mumbai, considering intricacies of law, adopted procedures, environment and overall development. This order would clear the minds of all those questioning the project need and process followed. The project implementation will restart and we are taking all steps to meet the completion dates set earlier.

Much awaited Stage-1 Forest Clearance from MoEF&CC, GoI for Dharavi & BKC stations have been received.

Mumbai Traffic Police also approved the Traffic Diversion Plans and cleared the way for implementation.

As promised, MHADA has released 86 Pimpalwadi tenements for transit accommodation of Kalbadevi & Girgaon residents as part of in-situ rehabilitation. This will help the residents to decide on their transit housing and accelerate evacuation of affected buildings for project work to start.

State Govt. also released 7200 sqm land at Aarey required to accommodate the termination of HT lines leading to Reliance Substation. The pylons are conflicting with the tracks and OHT in the car depot.

The project will be encountering its first monsoon in implementation. All contractors are directed to take up necessary works and be prepared as stipulated by MCGM for monsoon.

Content

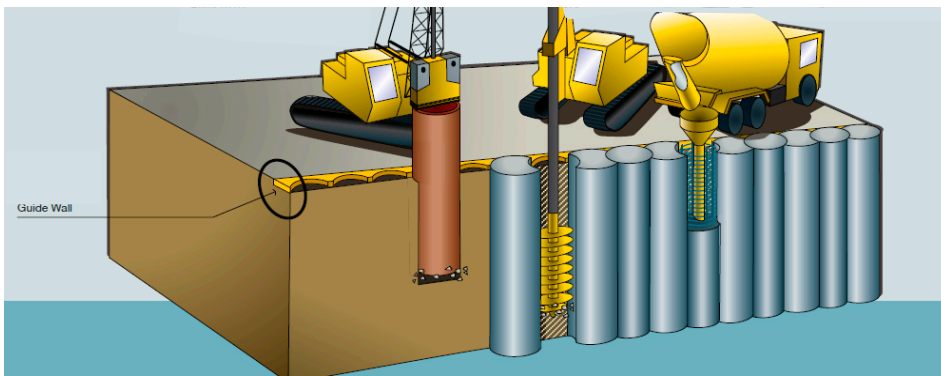
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SECANT PILE

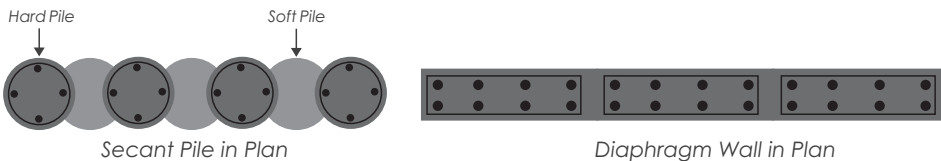
The use of secant pile walls was developed in Europe over 20 years ago as hydraulic machines became more powerful to meet the need for construction of basements and shafts on sites with marginal land availability in the urban environments. Secant pile walls are formed by constructing alternate "reinforced/secondary/hard" and "unreinforced/primary/soft" piles.

Secant piles are not part of the permanent structure and can be removed later once the permanent structure is constructed. The piles are embedded in rock with a typical spacing of 1.5D (1.5 times diameter of the pile) between two hard piles. The permanent structure can be then fully waterproofed ensuring safe and effective structure.



Construction of Secant Piles

(For illustrative purpose only. Subjected to change for changes in geological profile.)
Source: www.railsystem.net

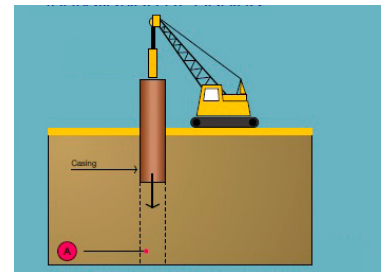


Secant pile is chosen over diaphragm walls for more restricted sites when the wall is constructed by continuous flight auger (tool with helical shaft for drilling) or with temporary casings. Secant piling offers minimal vibration, low noise levels and the flexibility to fit complex site boundaries to maximise usage of available land and avoids any risk of construction induced settlements to neighbouring structures. Secant pile also turns out to be cost effective as compared to diaphragm walls.

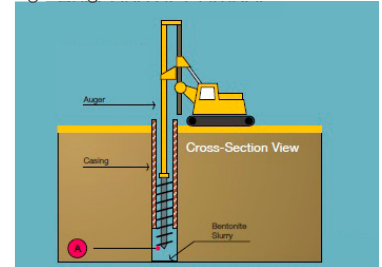


Secant Pile - L&T UGC-07, Pali Ground, SEEPZ

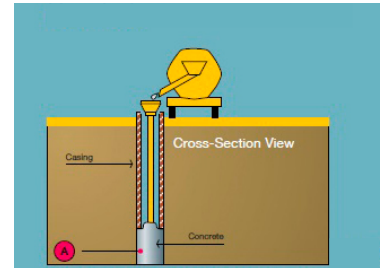
1 Installing Casing in Guide Wall



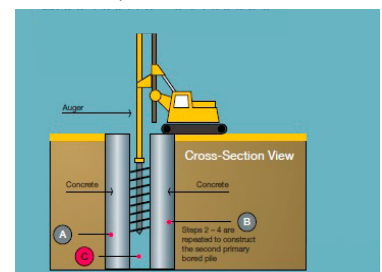
2 Primary Borehole using continuous flight auger



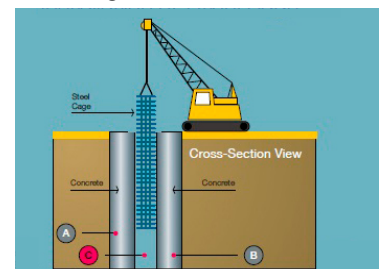
3 Concreting Primary Borehole



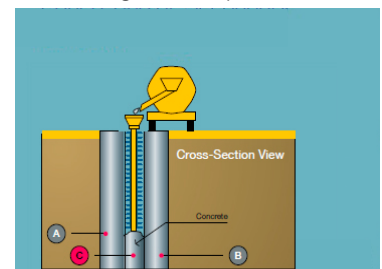
4 Secondary Borehole



5 Steel Cage Installed



6 Concreting Secondary Borehole

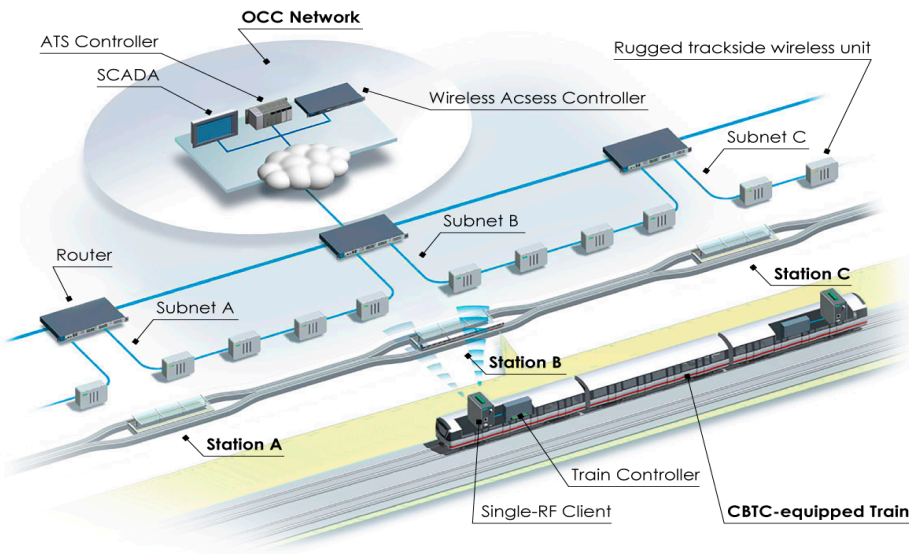


Source: www.railsystem.net



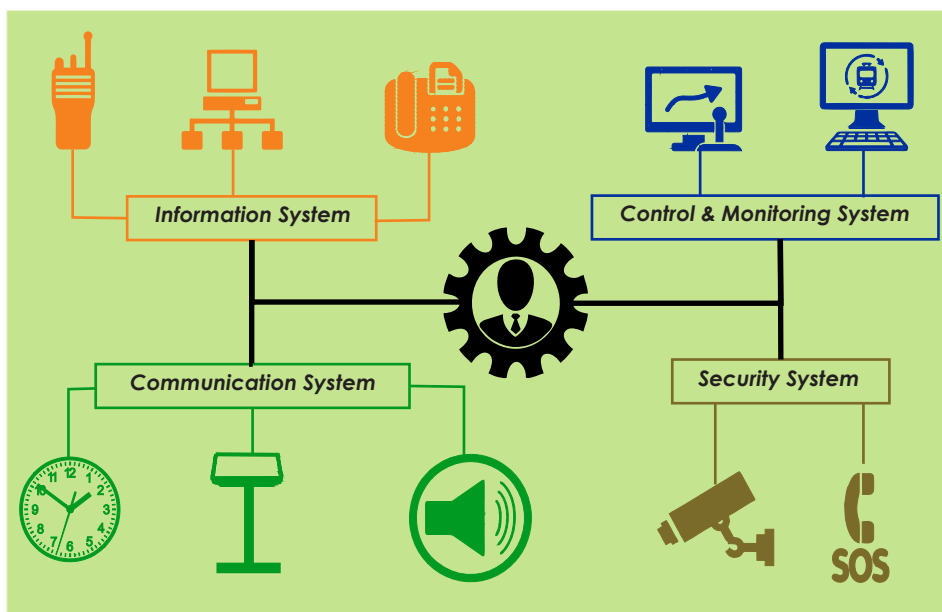
TELECOMMUNICATION SYSTEM

The Metro Telecommunication infrastructure will act as an important backbone for integrated functioning of other sub-systems such as Signaling and Train Control, Electrical SCADA, Automatic Fare Collection System etc. In addition, telecommunication infrastructure will also be used to meet passenger amenities and operational & administrative requirements of metro network.



Communications-based train control
Source: <http://www.moxa.com>

Metro Line-3 will adopt intelligent infrastructure concept for telecommunication which allows predictive asset management one centralized Operation Control Centre (OCC) and one Back-up Control Centre for the entire corridor.



Telecom Management System

Components of Telecommunication System

- **Fibre Optic Cable** - Medium of electrical signal transmission.
- **Telephone System** - Authorized Telephones.
- **Mobile Radio Communication System** - Communication between Motorman and the Central Control Room.
- **Passenger Address System (PAS)** - Enables broadcasting of voice messages.
- **Time Distribution System (TDS)** - Accurate display of time.
- **Passenger Information Display System (PIDS)** - visual indication of train status.
- **Closed Circuit Television (CCTV) System** - Real time surveillance.
- **Voice Recording System (VRS)** - Records all the Operational Control Centre (OCC) voice conversations and announcements
- **Emergency Help Point System (EHPS)**- Assist passengers to contact station controller.
- **Fault Reporting Systems(FRS)**- Collect and monitor the status and alarms.
- **Access Control and Intruder Detection System (ACIDS)** - Restricts entries to important service areas.
- **Uninterrupted Power Supply (UPS)** - Provides need based seamless uninterrupted power supply.

Telecommunication system is critical in Metro meeting the requirements for:

- Signaling and other sub-systems
- Exchange of managerial information
- Crisis management
- Passenger information
- CCTV for safety and security



KNOW YOUR STATION - GIRGAON



Kothachiwadi



Wholesale Markets in Girgaon

Inside Girgaon's Wadis



Zaoba Ram Mandir - Fanaswadi



View of Saifee Hospital & Byramjee Jeejeebhoy Parsee Charitable Institution from Charni Road Station



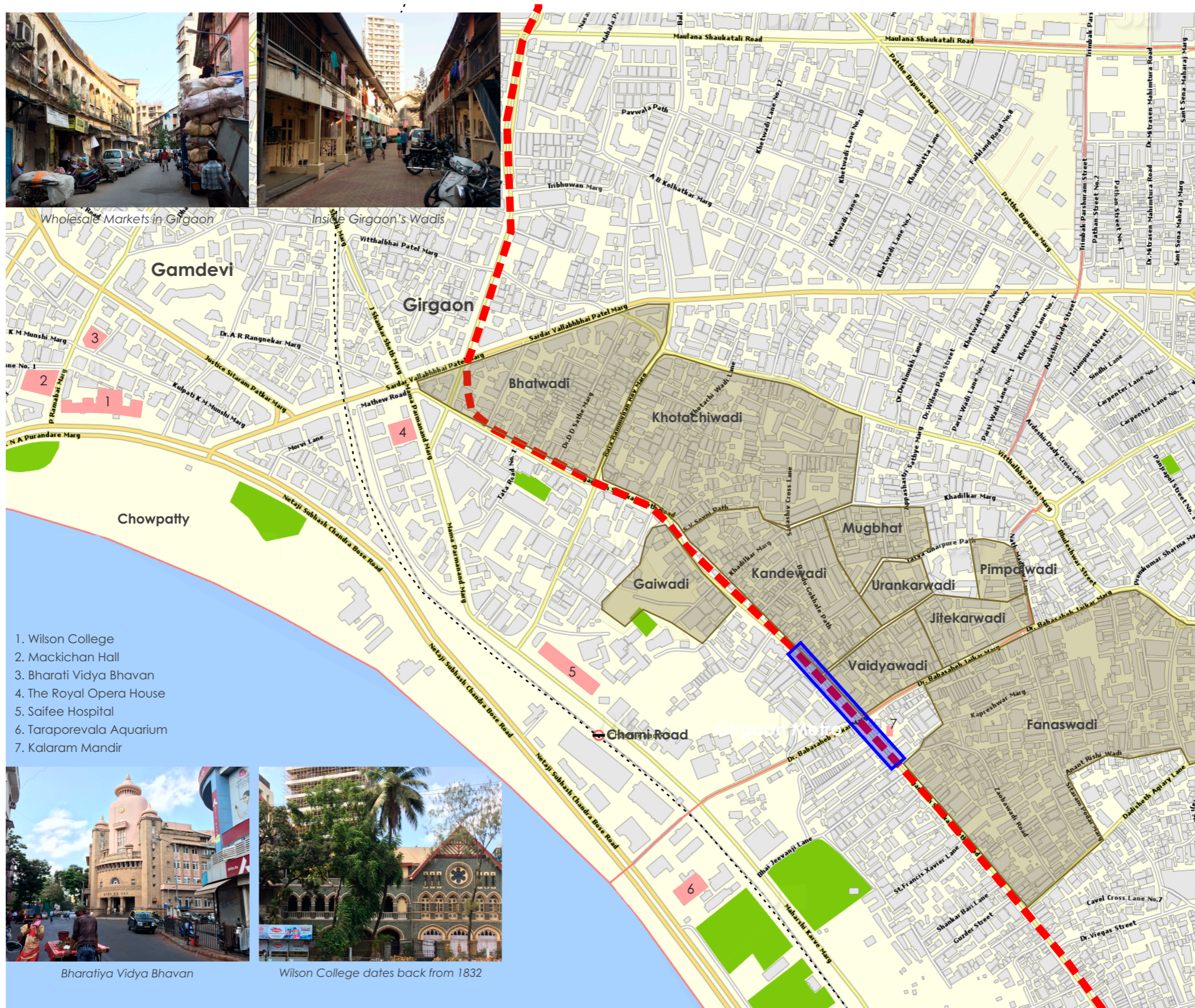
Chowpatty Beach - famous destination during Ganesh Visarjan



Bharatiya Vidya Bhavan



Wilson College dates back from 1832



- 1. Wilson College
- 2. Mackichan Hall
- 3. Bharatiya Vidya Bhavan
- 4. The Royal Opera House
- 5. Saifee Hospital
- 6. Taraporevala Aquarium
- 7. Kalaram Mandir

A residential hub in South Mumbai, Girgaon, translating to 'village by the foothills' boasts few of the oldest settlements found in the city with the ever famous Chowpatty beachfront.

The precinct is diverse in its communities (Gujaratis, Konkanis, Jains, Marwaris, Christians, Hindus etc.), commercial activities and traditional businesses (diamond, paper, eateries etc.) and institutions like Saifee hospital, Reliance hospital, Wilson college, B. M Ruia college, Bharatiya Vidya Bhavan etc.

Girgaon Metro station is the 7th from the south and passes through this busy residential, commercial, business and institutional hub which will facilitate congestion free transit between the historical quarter of South Mumbai and nearby localities.

The precinct is currently served by Charni Road Station of Western Line, and the metro station will provide seamless access to the heritage precinct, Chowpatty beachfront and various other important destinations like Opera House, Bhuleshwar.

Girgaon is composed of small neighbourhoods called as 'Wadis'. There are many such Wadis in Girgaon namely - Vaidya wadi (Annapurna wadi) Bhat wadi, Jitekar wadi, Gai wadi, Kandewadi, Bhutachi wadi, Urankar wadi, Fanas wadi, Pimpal wadi etc. One of these- Khotachi wadi, a heritage village is known for its Portuguese style wooden architecture. Girgaon is one of the culturally rich areas of the Mumbai with a tradition of Marathi theatre, classical music, festivals and art.

During Ganesh festival, Girgaon Chowpatty is flooded with people on Ganesh Visarjan day.

ENVIRONMENTAL CLEARANCES

MOEFCC (Ministry of Environment, Forest & Climate Change) has given green signal to MMRC to carry on with the construction work for the Colaba-Bandra-SEEPZ Metro-3 corridor at two land parcels admeasuring 0.91 hectares and 0.34 hectares. MMRC will carry out construction for the BKC and Dharavi Metro stations at the respective plots of land.

With this clearance, we will be able to fast track our construction activities for metro stations at BKC and Dharavi. The Environment Ministry has given the clearance in the wake of the recommendations made by Additional Principal Chief Conservator of Forests (PCCF) and Nodal officer (FCA) and central and state Governments.

The MMRC is also working towards in-situ Mangrove Restoration plan, which will soon be submitted to MMCU (Mumbai Mangrove Conservation Unit) for approvals.

PROJECT NEIGHBOURHOOD

MMRC, GVK, MIAL & J Kumar jointly organised an initiative 'Go Green' at the Mumbai International Airport. Plant saplings were distributed to the airport travellers through this initiative which was well received from everyone.

MMRC has so far distributed 24,893 saplings (against targeted 25,000) under 'Project Neighbourhood'.



'Go Green' initiative at International Airport - UGC-06

UGC -07 BAGS SAFE EMPLOYER AWARD

L&T-STEC JV, Mumbai Metro UGC -07 Project won two prestigious awards from the Occupational Safety and Health Association India (OSHA) for the 'Safe Employer of the Year -2017' (2nd place) and winner in the 'Best innovation' category.

The awards were presented during the OSHA 2nd Annual HSE Excellence Awards 2017 at Westin Garden City Hotel, Mumbai where Mrs. Shirin. S. Lokhande – Deputy Labour Commissioner Maharashtra, along with Mr. Suhas Bagade, Chief Electrical Inspector, Maharashtra and OSHA Senior members presented the honor.

Dogus-Soma JV, for Metro 3 (UGC - 04) received an award of appreciation from OSHA in the same category.

PROJECT UPDATES

Bidding for state-of-the-art elevators & escalators

MMRC has received response from 15 companies for supplying state-of-the-art elevators and escalators at 27 stations on Metro-3.

The companies that participated at the pre-qualification stage include – M/s. Otis Elevator Company (India) Ltd. and Otis Electric Elevator Company Ltd., M/s. Autometers Alliance Ltd., M/s. Fujitec India Pvt. Ltd., M/s. City Lift India Ltd., M/s. Johnson Lifts Pvt Ltd., M/s. SJEC Corporation, M/s. Schindler India Pvt Ltd. & Schindler Fahrtruppen International, M/s. Schindler Turkeli Asansor Sanayi AS, M/s. KONE Corporation and KONE Elevator India Pvt. Ltd. and M/s. Royal Infrastructure Ltd. on behalf of SE-ROYAL Consortium.

MMRC has received eight bids for escalator package and seven bids for elevator package as per the guidelines prescribed by JICA.

The bid evaluation is expected to be completed in two months for both the packages. It will be followed by tender submission of the short-listed firms after obtaining concurrence of JICA.



L&T-STEC JV, Mumbai Metro UGC -07 wins (2nd place) Safe Employer of the Year Award

CITIZEN'S VOICE

Jayant Sathe, our citizen author this month was born and brought up around Shivaji Park, an engineer from IIT Mumbai, now an American Citizen but a Mumbaikar at heart. Jayant, during his career as a project manager in building - design - construction has lived and worked in different parts of the world and has seen Mumbai evolve over the years. His thoughts about changing Mumbai in his own words...

I was born and raised in Mumbai in the 50s and 60s. The City was less crowded then. It had a strong north-south rail connection. But, east-west connection was very poor.

The Mumbai I grew up in is gone. Some things have changed for better and others for worse. The Mumbai of my childhood washed streets every month using water from fire hydrants. The BMC used to have vans to catch stray dogs. People stood in line to get in the buses, no crowding and pushing. But, all that is now history.

On the other hand, some things have changed for better. The City today is much greener with a lot of gardens sponsored by big Corporations. The BMC also develops and maintains gardens and flowers along the roads. There are several flyovers in the city that allow faster travels. I can reach from Shivaji Park to Thane in 30 minutes, something unimaginable in the 1960s. I think the city has come up with some creative answers. The local trains have gone from 6 compartments long to 12 compartments long. They keep getting longer to haul more passengers on each train. The frequency of trains keeps increasing. Thanks to some very creative engineering solutions from the Indian Railway engineers that you seldom, if ever, see a collision of local trains. There are people in the world who are studying these Mumbai Local Railway engineering solutions for re-application. Bravo!

The City has also added the Sea Link, another technological marvel. It has added Varsova- Ghatkopar Metro, a much needed east west connection. It is working on a Monorail system that is already partially operational.

All these accomplishments in transportation are dwarfed by population growth though. Therefore, I am delighted to see the City undertake construction of the underground train system called Mumbai Metro line 3. A similar, though shorter, underground rail system was proposed in 1920 by the British and again in 1950. Unfortunately, it could not be built then. This time the rail line will be longer - from Cuff Parade to Bandra to SEEPZ. When completed, this 33.5 km long line will be a welcome relief to the traffic on the surface roads as well as on the Western Railway local train system.

The City of London built the first underground railway system in the world in 1863. Not having too much traffic on the surface roads at the time, they did open excavation for building these tunnels. In today's traffic situation in Mumbai, we do not have the luxury of doing open trench construction. So, boring the tunnel in the rock strata under the city is the best technical option. The City has experience with this technology. In the past 10 years, BMC has drilled tunnels in the rock strata under the city for City's water supply. The underground water system did not need surface stations. They needed just a few access shafts to reach the tunnels. This underground rail line will need 27 surface stations for the passengers to access the railway from the surface roads. Therefore several residents living in the vicinity of these stations will experience inconveniences related to construction in their neighborhood.



The City faces a lot of challenges related to population growth. I feel that the Mumbai Metro Line 3 is desperately needed to bring relief to the city's traffic problems. I know that line 3 construction by itself will not solve all the traffic related problems. However, it is certainly a step in the right direction.

I have travelled in the local/city underground railway system in the Cities of Chicago, New York, London, Toronto, Mexico City. So, I can tell you from my personal experience that it is a safe, comfortable and speedy commute even in the rush hour.

I am proud to see my city, Mumbai, added to the list of cities in the world that are using modern technology to build this underground railway.

I acknowledge that the residents that live around any of the 27 stations being built at the surface level for line 3, will experience some inconveniences during construction. Unfortunately, it is unavoidable.

If you are inconvenienced by this construction, you are doing this for the larger good of the society. I salute you for being a 'good neighbor' for the long term convenience of the millions in the city that will ride these trains.

Reach Jayant at - sathe.jayant@gmail.com



HON. CHIEF MINISTER REVIEWS THE CONSTRUCTION WORK OF METRO-3



Hon. Chief Minister Shri Devendra Fadnavis visits Metro Line 3 for reviews and inspections

Hon. Chief Minister Shri Devendra Fadnavis inspected the Metro Line III project from Jogeshwari-Vikhroli Link Road (JVLR) upto Cuffe Parade. The Chief Minister reviewed the civil work being undertaken around Metro Line III. Ms. Ashwini Bhide, MD, MMRC briefed the CM on the completion of 2,000 plus secant piles in seven civil packages. She also informed him about the employment of more than 2,500 workers, both skilled and unskilled for the development of the project.

Ms. Bhide apprised him about 17 Tunnel Boring Machines (TBM), which will start excavation in the city in October 2017. Shri. Fadnavis discussed about more than 160 plants and machineries that have been deployed for smooth implementation of the project and recognised commissioning of the three casting yards where the manufacturing of segment rings is currently in progress.

CM appreciated the work being done by MMRC officials for Metro Line 3 that will benefit Mumbaikars by connecting the unconnected. He directed to ensure seamless connectivity between Airport terminus, Mumbai Central Railway station and State Transport depot from the respective metro stations and assured complete assistance by the State Government of Maharashtra in completion of the project.

CM first halted at Terminal 2, Chhatrapati Shivaji International Airport (T2), where he had a brief discussion about the project with Mr. UPS Madan, MC, MMRDA, Ms. Ashwini Bhide, MD, MMRC, Mr. Praveen Darade, AMC, MMRDA, Mr. S.K Gupta, Director (Projects), MMRC along with other key officials of the Metro 3 project. He also reviewed civil work in progress at SEEPZ, Marol Naka, Siddhivinayak, Azad Maidan and Cuff Parade.

METRO 3 AT IITL SUMMIT, NEW DELHI

Hon. Minister of Road Transport and Highways of India, Mr. Nitin Gadkari appreciated the MMRC stall at India Integrated Transport & Logistics Summit (IITL) Summit, 2017 held at Vigyan Bhavan, Nd on 5th to 8th May.



MMRC INAUGURATES R&R OFFICE IN KALBADEVI

MMRC inaugurated Rehabilitation and Resettlement office in Chira Bazar, Kalbadevi, Mumbai under the in-situ rehabilitation plan.

MMRC officials and consultants will be available in the project office to provide assistance for resolving the grievances of 651 PAFs in Kalbadevi and Girgaon area in a fast track mode. MMRC is committed to providing best accommodation for families under in-situ rehabilitation plan.

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