

COLABA: PENSTOCK GATE REPLACEMENT

Objective/Background

A penstock gate is sluice or gate that is used to control the flow of water. The penstock gates at Colaba Zone pumping station were damaged due to age and regular wear and tear. The MCGM is the biggest municipal body in India. Water supply and sewage disposal are managed by many of its pumping stations that work round the clock.

Any waste that is generated within the city has to be disposed off in a manner that it is hygienic and efficient. As an activity, this is extremely important to a sprawling city like Mumbai. The waste generated is managed by different zonal pumping stations and all the sewage generated in South Mumbai is managed by the Colaba Pumping Station. The pumping stations are located at Colaba, Robert Road, MerryWeather, Afghan Church, NF Road, Kitridge Road and ChurchGate.

Flow of sewage is directed to these pumping stations through a vast network of underground ducts and pipelines. The flow of sewage is controlled by penstock gates that due to the regular use were damaged and required replacement.

Approach

Given how critical the project is and the experience that VEMC has with such large operations, the MCGM asked the company to assist with the replacement. The job was challenging and dangerous as these gates would be installed 15-20 feet below the ground level through a small opening.

VEMC as a solution provider

Given the extensive experience working on a range of projects, VEMC identified the problem, charted a route map to tackle the problem and deliver a solution within a stipulated time. The scope of work included design stage inspections, Supply, Installation, Testing and Commissioning of the entire Thimble Mounted Gates.

Challenges

- Sewage disposal unlike water distribution is much more dangerous and challenging. Positive isolation was not possible at the sites for dismantling existing valves as well as fixing new door frame.
- Leaking water at the intake chamber was partially isolated by a cofferdam that was constructed to complete the job.
- The lack of space and the emission of poisonous fumes added additional difficulty to the task.

Outcomes

VEMC has successfully replaced the following gates at various pumping stations. The gates are working efficiently and to the satisfaction of the client.

Name of the pumping station	Gate Size	Qty
Colaba WWTF	1500mmX1500MM	2No
Robert Road	750X 750MM	3Nos
Merry Weather	1000X1000MM	1No
Merry Weather	450X450MM	1 Nos
Afghan Church	1000X1000MM	3 Nos
Church Gate	600X600MM	3 Nos
NF Road	600X600MM	2 Nos
Kitridge Road	600X600MM	1 Nos





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