

VADODARA SMART CITY DEVELOPMENT LIMITED [SAYAJI GARDEN, VADODARA]

END USER:	Vadodara Smart City Development Limited
TOTAL CAPACITY:	750 KLD [Before] to 3 MLD [After]
TREATMENT SCHEME:	Sewage Treatment plant 8.5 MLD to 16 MLD. Capacity expansion from 8.5 MLD STP (activated sludge technology) to 16 MLD STP (PVA Gel technology) without extra space.
CONTRACTOR :	Rajkamal Builders Infrastructure Pvt Ltd

BACKGROUND

A sewage treatment plant of capacity of 8.5 MLD based on the Activated Sludge Process was completed and commissioned in 2010 at Sayaji Garden, Vadodara, Gujarat by Vadodara municipal corporation. Today the sewage generation capacity is increased in the zone and the STP is overloaded. A total capacity of 16 MLD STP is required as per current demand. Hence a 7.5 MLD expansion is required.

CHALLENGE

As the STP is situated in the populated area of city, it was difficult to allocate more space for expansion. Hence the expansion of 7.5 MLD in existing 8.5 MLD STP to make it 16 MLD STP should be done in existing infrastructure only.



SOLUTION

As the space is major issue in this project, all the conventional technologies like SBR & MBBR cannot deliver the result. While MBR is economically not viable. PVA Gel Based process is the only technology that can deliver the desired output considering the space & economic constraint.

MAJOR MODIFICATONS

1. Partition walls in existing aeration tank.
2. Installation of PVA Gel Media & Its retention screen in one partition.
3. Installation of Diffused aeration system i.e. Blowers, Diffusers, Piping etc.
4. Construction of new clarifier.
5. Installation of Disc Filters.

MINOR MODIFICATIONS

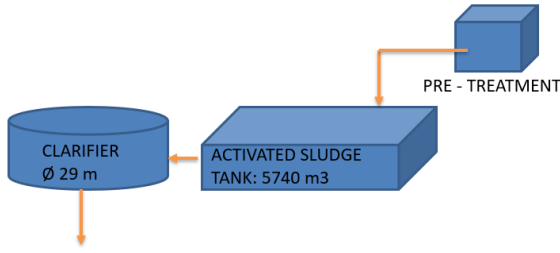
1. Service of Pre-Treatment equipment.
2. Installation of Poly dosing system at clarifier.
3. Installation of Latest Instruments.
4. Installation of Anoxic mixers.
5. Installation of Raw Sewage Transfer Pump in Equalization tank.

BRIEF COMPARISON

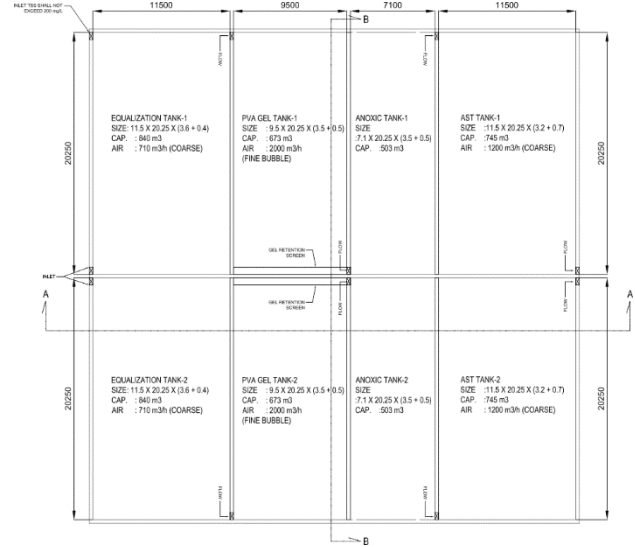
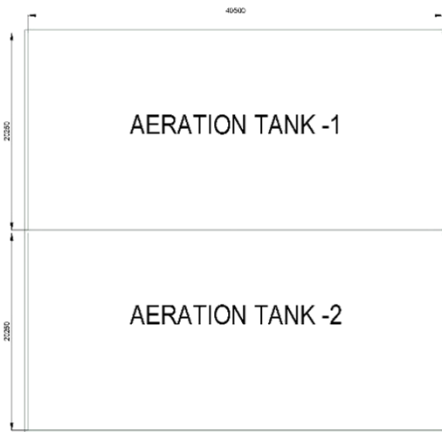
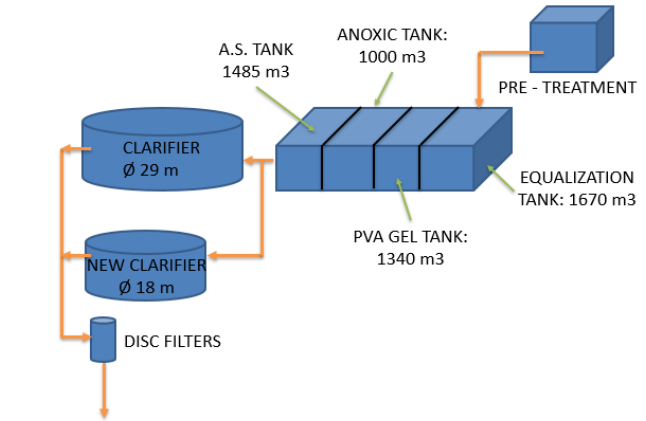
RTABLE-1R	OLD PLANT	NEW PLANT
CAPACITY	8.5 MLD	16 MLD
PROCESS	ACTIVATED SLUDGE PROCESS	PVA GEL PROCESS
BOD	< 30 mg/L	< 5 mg/L
COD	< 50 mg/L	< 30 mg/L
TN	< 35 mg/L (UN TREATED)	< 10 mg/L
TSS	< 20 mg/L	< 5 mg/L
TP	< 7 mg/L (UNTREATED)	< 2 mg/L

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OLD PLANT



NEW PLANT



EXECUTIVE SUMMARY

The plant will operate on 16 MLD sewage load while it was 8.5 MLD previously. Using the advanced technology of PVA Gel any old plant can be enhanced to increase capacity & quality of treatment. The cost of increasing 7.5 MLD capacity in existing plant is much lesser than constructing new 7.5 MLD STP.

There are several OLD STP in India working on old technologies & as the population grows these STP will be overloaded soon. Not only these STP will be overloaded, the treatment quality also does not comply with latest pollution control board norms. Hence by-using this technology an old STP can be upgraded to increase capacity & improve treatment quality and all that required is minor civil work modification in existing STP.

Total area required by an Activated sludge process based STP would be 3850 m², while we have completed in 2050 m².