



SRFDCL

Sabarmati Riverfront



*India's Most Successful River Cleaning
(Sewage Interception & Bank Development)
Project, Ahmedabad.*

HCP



- 1999 : **Prime Minister's Award** - Excellence in "Urban Planning and Design"
- 2006 : **Prime Minister's Award** - Excellence in "Urban Design and Concept"
- 2006 : National Safety Council of India - **Safety Award** (*Prashansa Patra*)
- 2011 : **Housing and Urban Development Corporation Award** (HUDCO) - "Innovative Infrastructure Development"
- 2012 : **Housing and Urban Development Corporation Award** (HUDCO) - "Best Practices to Improve the Living Environment"
- 2014 : Construction Industry Development Council (CIDC) **Vishwakarma Award** - "Best Construction Project"

Situation:

Sabarmati River has been an integral part in the life of Ahmedabad since the time the **city was founded in 1411 along the river banks**. Besides being an important source of water, it provided a backdrop to cultural and recreational activities. During the dry seasons, the river bed became a place for farming. With time it also



offered place for various informal economic activities, and the river banks were used by informal squatter settlements.



Gradually, however, the **intensive uses took their toll on the river**, untreated sewage flowed into the river through storm water outfalls and dumping of industrial waste posed a major health and environmental hazard. The river bank settlements were disastrously prone to floods and lacked basic infrastructure facilities making the river inaccessible - **slowly, the city turned its back towards the river....!**

Solution:

French architect Bernard Kohn proposed an ecological valley in Sabarmati basin stretched from Dharoi Dam to Gulf of Cambay in the **1964** - he proposed an Integrated Planning and Development of Sabarmati Riverfront by reclaiming 30 hectares (74 acres) of land.

The project was considered feasible in 1966 by the Government of Gujarat. The Ahmedabad Municipal Corporation (AMC) set up the Sabarmati Riverfront Development Corporation Ltd (SRFDCL), a special purpose vehicle, in May **1997** funded by the Government of India.

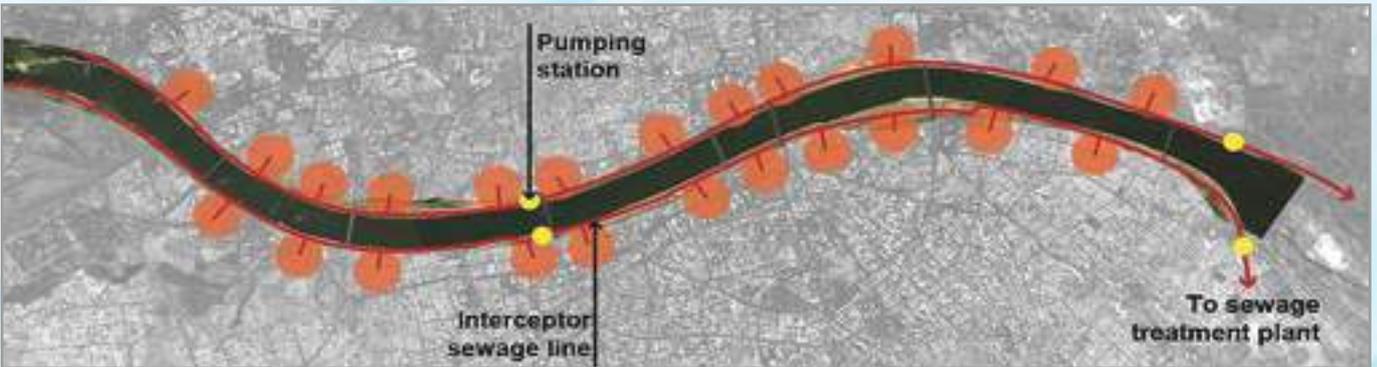
Environmental Planning Collaborative (EPC) led by m/s. HCP prepared the feasibility report in 1998 with an estimated cost of **INRs.1,200 crore (US\$170 million) which was to be recovered by selling of a part of reclaimed land for commercial and residential purpose**. The construction began in **2005**.

“ The Project is an Urban Re-generation & environmental improvement initiative.”

- KPMG



The Massive Sewage Diversion:



The sewage from **38 drainage points** used to fall directly into the river earlier, making the water dirty, mosquito ridden and creating an unhealthy environment.



To stop the pollution of the river from the storm water outfalls and industrial effluents, **an integrated storm water and sewage system with interceptor sewers had to be implemented.**

These interceptor lines have been installed along both banks of the river capturing 38 sewage from discharge points and re-routing the sewage with new pumping stations in the reclaimed banks. These lines carry untreated sewage to the augmented sewage treatment plants south.

Aqua's Solution:

Non Clog Sewage Submersible PumpSets.

Sr. No.	Capacity	Head	Qty.	Rating	Name of Pumping Station
1	1630 m ³ /hr	10m	4 Working+1 Standby	100hp	52 MLD Usmanpura Intermediates PS, WestSide.
2	1800 m ³ /hr	25m	5 Working+1 Standby	250hp	77 MLD Vasna Barage, Terminate PS, West Side.
3	2625 m ³ /hr	8m	3 Working+1 Standby	140hp	84 MLD Shahpur Intermediate PS, East Side.
4	2070 m ³ /hr	20m	6 Working+2 Standby	250hp	149 MLD Ambedkar Bridge Terminal PS, East Side

- Aqua's Customer : **m/s Kirloskar Brothers Ltd.**
- End Customer : **m/s SRFDCL (Sabarmati RiverFront Development Corporation)**



After the launching of the project Sabarmati is now much more cleaner

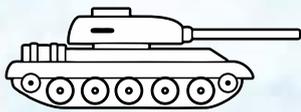


Before the project was started, a comprehensive study was carried out. The pumping stations of SRFDCL equipped with Aqua pumps proved to be an ideal solution—both from a meaningful waterfront environment, along with sewage diversion to clean the river; water retention & recharge and from an economic view-point.

The Sub Sewage pumps had been installed vertically auto-coupled and working satisfactory & maintenance free **since 2009 to till date**. In this way, the SRFDCL Project in Ahmedabad shows how sewerage problems of rivers can be reliably solved with Aqua technology.



Robust, Multiple (*Duplex or even Triplex*) DE Bearing arrangements, easily tolerate **Heavy Thrusts** (*emanating due to wide head variation*) for **L10h** exceeding **1,00,000h**



Robust Tank
like **Build**



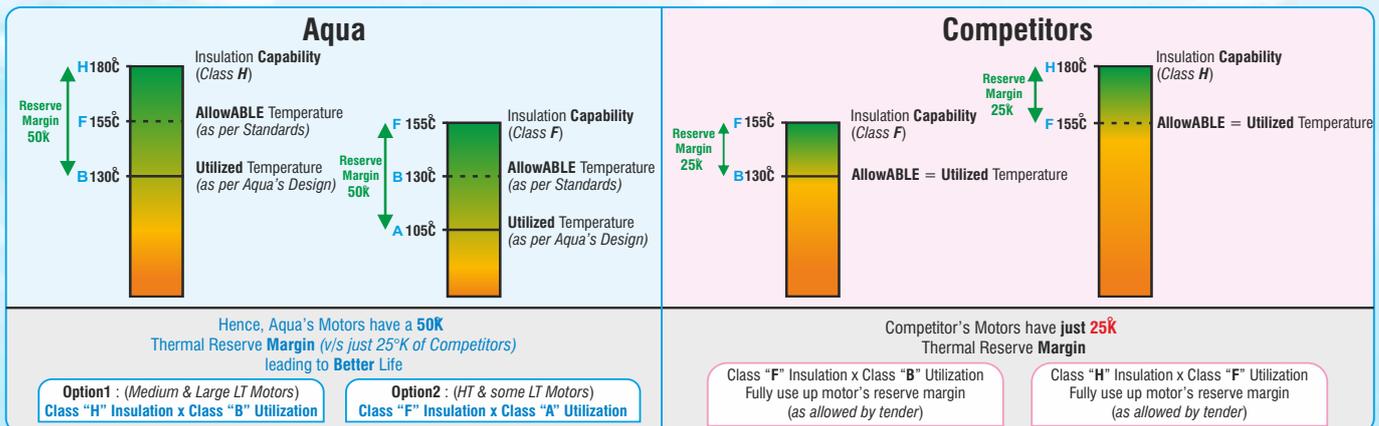
Tolerates Wide
Voltage **Variation**



Tribologically Optimized Bearing components
for Bullet Proof **Reliability**

Higher Motor STATOR Thermal Reserve Margin

As a rule of thumb in Motor Industry (*based on Arrhenius Equation*);
for every 10°C (*or more precisely 10°K*) Drop in Temperature, the useful Life of Insulation is Doubled.
Hence with a 50°K Reserve Margin (*v/s just 25°K of Competitors*);
Aqua's (*Motor {Stator}*) Insulation will have a **6 times** Higher Life (*than competitors*)

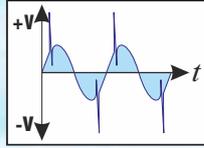




Reliability



Quality



Tolerates Power Spikes & Surges



A Strong Shaft for Fail Safe Operation

Project's Benefits:

It can hold 470,000 cu ft/s (13,000 m³/s) without spillage while a total of 202.79 hectares (501.1 acres) of land is reclaimed. The reclaimed land is used for public as well as private development. More than 85% of the reclaimed land proposed be used for public infrastructure, recreational parks, sports facilities and gardens while nearly 14% proposed be used for commercial and residential purpose.

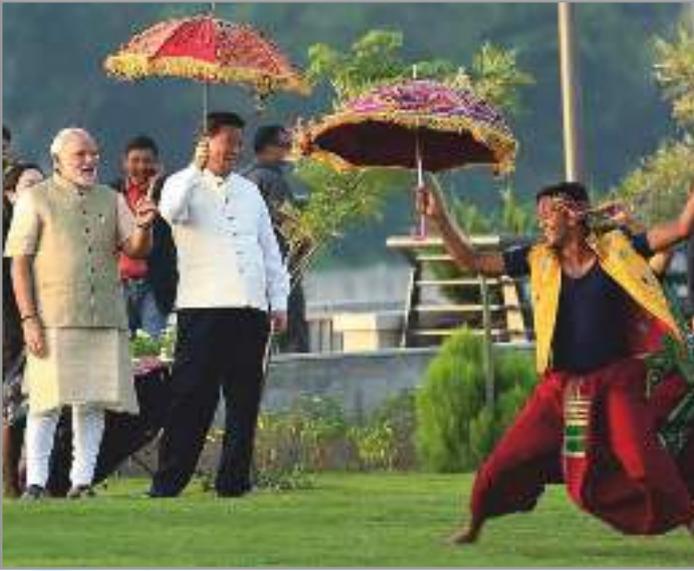
It improves environment by reducing erosion of the banks and flooding of low-lying areas of the city by the walls constructed on the both banks. The new integrated sewage and storm-water system intercepts 38 former sewage and industrial effluent discharge points and route it to sewage treatment plants south of Vasna Barrage.

Riverfront Flower Park

To witness the beauty of the nature, Flower Park offers variety of flowers to enthuse the feeling of joy and happiness in oneself. There are more than 72 varieties of species in this Garden full of flowers located near Ellisbridge. The unique feature of this Garden is that it has been differentiated on the basis of fragrance, theme, leaf color and many other things. This 3.85 Hectare park also has a valley of flowers to offer many different flowers at one place.



PM Modi & Chinese President Xi Jinping, enjoy the Riverfront ...!



Indian Prime Minister **Shri Narendra Modi** had host a dinner on the Sabarmati Riverfront, Ahmedabad for President of China **Mr. Xi-Jinping** on September 17, 2015 for a business meeting & to strengthen India-China ties.

KPMG has included Sabarmati Riverfront Development Project in the list of 100 Most Innovative Projects.



Pakistani delegation studies Riverfront Project in Ahmedabad.

Lahore City of **Pakistan** adopted some concepts implemented in the Sabarmati Riverfront Project for its ambitious Ravi Riverfront Urban Development (RRFUD) project, said members of the high-level delegation of the Lahore Development Authority (LDA). The team was led by the LDA Commissioner made a detailed technical inspection of the 11 Km. Riverfront stretch.

The main aspects of the Sabarmati Project that LDA officials looked into included the interceptor drainage lines being installed to divert domestic sewage and prevent it from draining into the river. The other aspects are the flood monitoring system of the river, and the recent project for tertiary treating of domestic sewage after which the treated waste will be allowed to flow into the river. The Pakistani team was particularly interested in the project for tertiary treating of domestic sewage because it studied it keenly.



YGL/SRFCL

Kirloskar Brothers Limited

PROCAT UNIT, Submersible Pump
August 4, 2008

Aqua Machinery Pvt. Ltd.
3021, MIDC, Phase IV, Waver
Ahmedabad (Gujarat)

Kind Attn: Mr. Ashish Patel / Mr. D.D. Bhattacharya

Sub: LOI for Sewage Submersible Pump for SRFDCU Eastern & Western TPS
(Submerged River Front Development Corp. Ltd.)

Ref: Your Offer No. AQJA/Sabarmati/Eastern/2007/04-10/1412 dtd 25.12.2007 &
subsequent discussions.

Dear Sir,

With reference to above subject, we are pleased to place letter of intent for 26 Nos. Sewage Submersible Pumps for SRFDCU Eastern & Western TPS (Submerged River Front Development Corp. Ltd.) at a lumpsum package price of Rs. 3,03,10,541.00 (Rupees Three Crores Eighty Three Lacs Ten Thousand Nine Hundred Forty One only).

Detailed Scope of Supply is as follows:

Sr. No.	Item	Qty. (Nos.)	Cum Cable (mts)	Podestal (Nos.)	Guide Pipe (mts)	Chain (mts)
1	Main Pump Capacity : 2500 m ³ / hr Head : 8 mt	4	140	-	15	15
2	Transfer Pump Capacity : 800 m ³ / hr Head : 8 mt	2	80	-	10	10
3	2nd TRPS Capacity : 2070 m ³ / hr Head : 20 mt	5	90	1	15	15
4	3rd Intermediate PS Capacity : 1530 m ³ / hr Head : 10 mt	5	90	1	10	10
5	4th TRPS Capacity : 800 m ³ / hr Head : 25 mt	5	80	1	10	10

The major items & quantities shall be as follows:

Prices : Prices shall be Firm and FOR 5% (inclusive of Freight, Packing & Forwarding Charges)

Excise Duty : Included in price

VAT Tax : VAC addn.

Thank you for your cooperation & assistance.
Yours faithfully,
Aqua Machinery Pvt. Ltd.

“As compared to most other River Cleaning or SPS projects {due to the location of all the 4 pumping stations (on the River banks) & large number of Private/Unaccounted Tubewells being used}; the pumping stations had to handle inflows above the rated capacity from day one failing which overflowing sewage would have sullied such an expensive & prestigious river front development project.”

We appreciate the tough duty handled by Aqua's submersible sewage pumps which play a small but crucial role in this engineering marvel.”

- M. K. Shah
Incumbent ACE (E&M),
AMC & SRFDCU

AHMEDABAD MUNICIPAL CORPORATION
SEWAGE TREATMENT PLANT DEPARTMENT

5th Floor, C-1 Wing
Sadar Taluk Bhamra
Telephone No. 25231981 Mobile No. 932984796

To Whom It May Be Concern

This is to certify that we are using 'Aqua' make Submersible non clog Sewage pumps of the following ratings:

Sr. No.	Capacity	Head	Qty	Rating	Name of Pumping Station
1	2500m ³ /hr	30mts	4W + 1S	1000-F	53MLO Luvani pump Inter med 200 PS, West Side
2	1800m ³ /hr	25mts	5W + 1S	2500-F	72MLO Vesha Baraga, Luvani PS
3	2070m ³ /hr	20mts	5W + 1S	1400-F	24MLO Mahatma Inter mediate PS, East Side
4	2070m ³ /hr	20mts	6W + 2S	2500-F	104MLO Amberkar B K Ge Taru med PS, East Side

These pumps are working satisfactorily since 2005. The pumps have given maximum performance.

Addl. Chief Engineer
STP Department
(Ahmedabad Municipal Corporation)

CIVILIAN PURCHASES LIST
PURCHASE ORDER
Projects & Engineering Works Div.

Page 1 OF 04
 NO. 1000000000000000
 DATE: 15.10.2015
 SUPPLY: 1000000000000000
 PAYMENT TERM: 10 DAYS CASH
 DELIVERY TERM: POSITIVE

TO:
 M/s AQUA MACHINERIES PVT. LTD.
 Plot No. 1221, Phase IV,
 GIDC, VAPI,
 ANANDGARH
 City: MUMBAI-400002
 Country: INDIA
 Tel: 91-22-25511100

FROM:
 M/s. AQUA MACHINERIES PVT. LTD.
 Plot No. 1221, Phase IV,
 GIDC, VAPI,
 ANANDGARH
 City: MUMBAI-400002
 Country: INDIA
 Tel: 91-22-25511100

ITEMS:
 1. 1000000000000000
 2. 1000000000000000
 3. 1000000000000000
 4. 1000000000000000
 5. 1000000000000000

TOTAL PURCHASE ORDER VALUE:
 ₹ 1000000000000000

“Despite the fact that our Principal Contractor (m/s Kirloskar Brothers Ltd.) themselves are reputed Pump manufacturers, for this ultra prestigious project; based on better credentials (of Submersible Sewage pumps), they wisely chose Aqua's pumpsets & this decision has fetched

good rewards for all the stake holders - the pumping stations have been seamlessly handling huge inflows right from 2009 till date without any undue maintenance.”

- Er. Biren Raval
 Addl City Engineer (E&M),
 AMC & SRFDCL

AHMEDABAD MUNICIPAL CORPORATION
SEWAGE TREATMENT PLANT DEPARTMENT

M. K. NISANU
 (B.E. Exct.)
 Addl Chief Engineer
 Sewerage Operation E. & M. Tel No- 079-25191901 Mobile No- 9974514366

5th Floor, 'C' Wing
 Sardar Patel Bhawan
 Harapath, Ahmedabad-380001

Date: 15/10/2015

SIN/286/15-16

To Whom It May Be Concern

This is to certify that total 25 nos. "AQUA" make Non-Clog Submersible Sewage Pump sets for Our SRFDCL project (Sabarmati River Front Development) were supplied at our following pumping Stations.

These pump sets are working satisfactorily since 2009 to till date.

Sr No	Capacity	Head	Qty	Rating	Name of Pumping Station
1	1630m ³ /hr	15mtr	4W + 1S	100HP	32MLD Umranpara Intermediate PS, West Side
2	1800m ³ /hr	25mtr	5W + 1S	250HP	11MLD Vasta Haraga, Terminal PS
3	1025m ³ /hr	8mtr	3W + 1S	140HP	34MLD Shalpur Intermediate PS, East Side
	875m ³ /hr	8mtr	1W + 1S	40HP	
4	2070m ³ /hr	10mtr	6W + 2S	280HP	140MLD Ambedkar Bridge Terminal PS, East Side

Total pumping Capacity & Motor rating (Qty) of these pump stations: 41,760 m³/hr & 4640 hp, of all 4 (PUS) pumping station.

ADDL CHIEF ENGINEER,
 S.T.P. DEPARTMENT
 (Ahmedabad Municipal Corporation)

Aqua Machineries Private Limited

www.aquapumps.com

Registered Office & Manufacturing Plant

Survey No. 504/1-2, 442/2, Near Haridarshan Estate, Near Express Highway, Ramol, Ahmedabad-382 445. Gujarat, India.

marketing@aquapumps.com