

Cost Effective yet Robust technology ensured that AQUA was chosen to supply large-scale raw water pumps when it was time to pump surplus water to Bharatpur Ghana Bird Sanctuary as it would be ready to host winged visitors in numbers not seen in the bird sanctuary since the 1990s...

### AQUA Provided

- High Efficiency SubCF pumpsets ensure substantial Power savings.
- PumpsetsAutomatically coupled & reliable maintenance free raw water even under challenging circumstances.



# KEOLADEO NATIONAL PARK

**Goverdhan drain ends water woes...  
Once again after a decade Bharatpur is ready for Winged visitors.**

### **A World Heritage Site by UNESCO was in Critical Situation:**

**Keoladeo** Ghana National Park formerly known as the Bharatpur Bird Sanctuary is one of the historical national park in Bharatpur, Rajasthan, India is a famous avifauna sanctuary that hosts over 230 species of birds. It is also a major tourist centre with scores of ornithologists arriving here in the hibernal season.

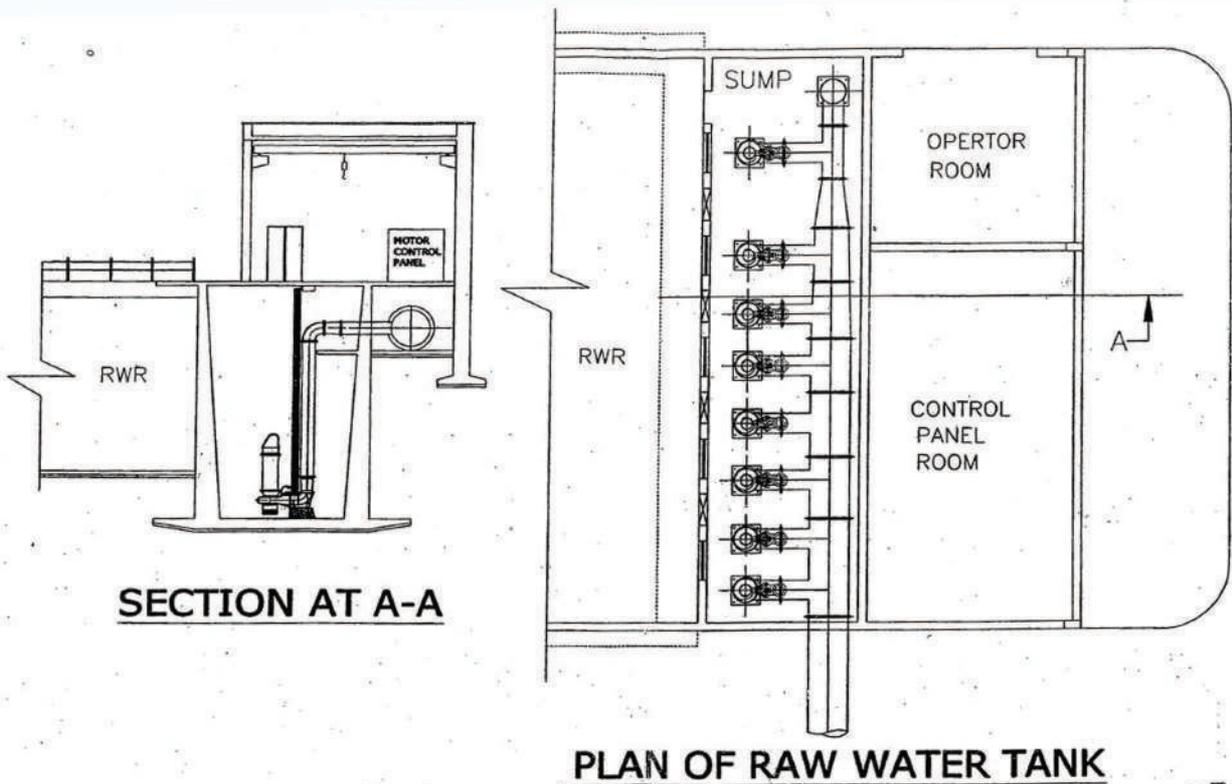
Unfortunately for a very long periods of time (almost after a decade) it was losing its winged visitors due to an acute shortage of water. Finally Rajasthan Government decided to divert (vide pumping) surplus Yamuna flood waters water to the KNP by using Aqua SubCF pumpsets vide a 17.4 km long from a small RWR on the Haryana-Rajasthan border to the park.



**“ Execution of Work of Supply of Additional Water to  
Keoladeo National Park (Ghana Bird Sanctuary)  
From Goverdhan Drain by diverting & lifting through  
GRP pipe line**

**On Single Responsibility Turn Key Basis.  
i.e Design, Build, Operation & Maintenance**

**Cost: Rs. 5604.00 Lakh ”**



*अमिताभ*  
अधिसाक्षी अभियन्ता  
जन स्वास्थ्य अभियांत्रिकी विभाग  
चम्बल-घोलपुर-भारतपुर परियोजना  
खण्ड- प्रथम मुहान्तलय भरतपुर

						CLIENT				
						LOCATION		TRANSMISSION MAIN FORM GOVARDHAN TO GHANA BHARATPUR		
						DESIGN				
						DRAWN				
						CHECKED	SCALE	SHEET	REV	DATE
						APPROVED	TITLE	GA OF PUMP HOUSE FOR SUBMERGED CENTRIFUGAL MOTOR PUMP	1/1	RD
						DATE				
FOR APPROVAL		✓	RO							
PARTICULARS	REV.	CIVIL	MECH	E & I	DATE					



- **Model Code** : ARS 3552 MM 500
- **Project Name** : Design, Build, O&M of Supply of Additional Water to Keoladeo National Park (Ghana Bird Sanctuary) by Pumping flood water of Goverdhan drain of Yamuna
- **End User** : P.H.E.D., Rajasthan, India.



*"Park's troubles began in 2003, when the height of the Panchna dam on the Gambhiri river was raised from 253 m to 258 m, which effectively left no water for the sanctuary. Severe water shortage over the years has kept many migratory birds away from the park."*

### **Aqua's Solution :**

8 Nos. of Submerged centrifugal pumpsets each rated 500 hp x flow of 2160 m<sup>3</sup>/hr at 49 m head installed Vertically into the RWR eliminating a conventional Under Ground pumproom mandatorily required for HSCF pumpsets thereby saving Cost & Space.

As the pumpsets were to be operated on DGsets; they had to be efficient. The Efficiency of SubCF pumpsets is already competitive as compared to optional VT & HSCF pumpsets. However due to :

- 1) elimination of Suction Manifold (like in HSCF pumpsets),
- 2) Line Shaft Spider Column Vertical Delivery pipe (like VT pumpsets),
- 3) Couplings, Intermediary Transmissions, etc;
- 4) elimination of Power Consuming :
  - a. Forced Ventilation Air Exhaust for Under Ground pumproom (as required in HSCF pumpsets)
  - b. Forced Water Lubrication pumpsets (as required in VT pumpsets)

The auxillary & ancillary head & power losses of SubCF are lowest resulting in further energy savings.

Aqua's SubCF the Lowest Wire to Water energy consumption (i.e. PS Specific Power consumption) & are running robustly in Silty flood waters since December 2013.

*"Many monsoon breeding birds have flown in to the park and we still expect a large number of migratory birds each winter. The current water availability should support the growth of enough vegetation for all birds that come here every winter,"*

*-Park's Field Director, Ms. Khyati Mathur.*