

The 2006 Global Water Awards

The best of the best in the International Water Industry



From the publisher of Global Water Intelligence, and Water Desalination Report



WATER DESALINATION REPORT

In association with the International Desalination Association and the International Private Water Association



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River, it was not an easy challenge; water quality fluctuates widely, and the river receives numerous discharges including agricultural runoff, power plant cooling water and effluent from sewage treatment plants.

Black & Veatch's answer was the \$65 million Columbia Heights Membrane Filtration Plant. It is the largest potable ultrafiltration plant in the Western Hemisphere and the second largest in the world. Lessons learned from the project are already influencing the design of future water treatment facilities and pointing the way to the increased effectiveness, economy, size and sophistication of membrane filtration facilities around the world.

Judges' Verdict: Black & Veatch has set a new standard for water treatment plants in the US with its Columbia Heights facility.

650,000m³/d at peak levels. The facility was built by Degremont in partnership with Egyptian construction firm Arab Contractors.

Judges' Verdict: If a wastewater treatment plant can change the world, this it is.

Highly Commended

Milano San Rocco WWTP

Located seven miles south of Milan, Milano San Rocco, is one of the largest wastewater treatment facilities in Italy. It is also one of the most stylish. The brief was to build a plant to serve 50% of Milan's population in such a way as to minimize the impact on the surrounding environment. Degremont rose to the challenge with a facility which is more like an avant-garde art gallery than a sewage works. And it is as clever as it is beautiful. A capacity for a population equivalent of 1,050,000 people has been squeezed into just 130,000m³. The water reclaimed from the plant is reused by local farmers and the sludge is dried and used as fuel in a nearby cement works. Energy usage in the treatment process is just 0.32kWh per m³ of wastewater treated. The plant is everything a facility for the style capital of Europe should be.

Judges' Verdict: Milano San Rocco wastewater treatment plant is state of the art in every sense of the word.

Highly Commended

Mountain House WWTP

When people move to a beautiful location, they don't stop needing



Distinction

Gabal el Asfar WWTP

With a population exceeding 15 million, Cairo is the largest metropolitan area on the African continent. The continued expansion of this great city has called for infrastructure investment on a massive scale. The Gabal el Asfar wastewater treatment facility is just that. When the final phase is completed, it will be the largest wastewater treatment plant in the world, with a capacity of 3 million m³/d. Biogas from the anaerobic digestion process will provide 60% of the energy needed to power the plant. The initial phase was completed in 2005 and has the total capacity to process



Gabal el Asfar WWTP

wastewater treatment facilities. Pacific Environmental Resources Corp. has come up with a solution to this problem, proving that such facilities need not obstruct the view.

The Mountain House wastewater reclamation facility in California is so low profile that even the neighbours need never know it exists. It replaces a nine hectare, 2,000m³/d treatment facility with a new 11,500m³/d water reclamation facility on less than one hectare of land, dramatically reduced the total footprint and making the surplus land available for other applications. The sequential batch reactor treats the wastewater in a tank concealed beneath a small office building. PERC's commitment to reducing the impact of wastewater treatment on the environment is not just cosmetic. The effluent is treated to title 22 reuse standard without the need for chemical treatment – probably a first for the US.

Judges' Verdict: One day all wastewater treatment plants will be built with this degree of concern for the environment.

Highly Commended

Racine WTP

A year after 100 people died in Milwaukee's Cryptosporidium outbreak of 1993, nearby Racine found its own plant overwhelmed by high turbidity and organic material. In response to this, the City of Racine sought to enhance its 187,500m³/d water treatment plant to protect its 110,000 inhabitants from waterborne pathogens and high turbidity spikes, which the previous system could not reliably handle. Following extensive pilot testing, the Racine Water Utility chose a ZENON ZeeWeed[®] membrane based system on the basis that it could offer outstanding value and performance. Raw water drawn from Lake Michigan now has to pass through an additional

membrane barrier, shutting out waterborne pathogens and the fear of a repeat of Milwaukee's nightmare.

Judges' Verdict: ZENON ZeeWeed[®] is the best guarantee of peace of mind that the people of Racine could hope for.

Highly Commended

Sha Tin WWTP

The name Hong Kong translates as Fragrant Harbour, but as many travellers will know, it has not always been the case. Fortunately, things have moved on, and Biwater Man Lee's HK\$339 million Sha Tin wastewater treatment facility deserves much of the credit. The plant serves a third of Hong Kong's population and following the final sedimentation process, the biologically treated effluent is clean enough to be discharged into Victoria Harbour. Bio-gas generated from the anaerobic sludge digestion process is used for fuel engines to provide hot water for the existing anaerobic sludge digestion tanks that in turn generate electricity to power the plant.

Judges' Verdict: Biwater has created an environmental and technological masterpiece.

Industrial Project of the Year

Winner

Magnolia Power Plant ZLD System

Building a new power station in California involves meeting the



Racine WTP



The Mountain House Water Reclamation Facility, Tracy, California GWI Highly Commended Water/Wastewater Project of the Year 2006

Mountain House meets the challenges of the world's growing demand for water through technical achievements in water reclamation.

Beneath this attractive, modern building lies an ecologically friendly, 11,500m³/d capacity Water Reclamation Facility utilizing PERC's ASP® technology.

Innovative use of technology has made it possible for the Mountain House Water Reclamation Facility to provide six times the capacity of the former facility on one-tenth the land. Treatment of wastewater occurs beneath the modern administrative and operations buildings in underground tanks that utilize less than one acre.

- Title 22 Certified
- Chemical Free
- Guaranteed Water Quality
- Advanced Technology
- Environmentally Sensitive
- Completely Odor Controlled



The PERC Total Solution™

PERC is a water quality and risk management firm providing clients with a Total Solution™ for water reclamation needs whereby the **total** focus is to guarantee water of the highest quality and a **solution** that results in value to its clients and the surrounding community.

➔ For more on Mountain House, visit percwater.com



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Total Solution™ Partners

