# Miranda Wastewater Solutions for **Hotels**

## **Robinson Club Maldives**

Case Study for Miranda STP System

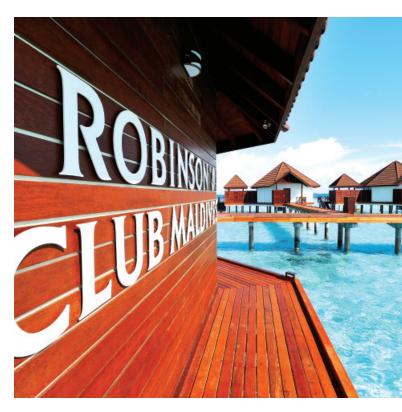
Number of Guestrooms	: 250
Total Population	: 500 people
Water Usage for Capita	: 400 lt / person
Daily Wastewater Flowrate	: 200 m³/day
The Quality of Treated Water	: Irrigation
Water Supply	: Desalination
Area to be Irrigated (est.)	: 20.000 m <sup>2</sup>

ROBINSON ° •

# In the majority of resorts and hotels wastewater is simply discharged...

Robinson Club recycles wastewater for Irrigation, benefits occur as outlined table on the right.





## Robinson Club, Maldives MIRACELL Wastewater Treatment System Feasibility Analysis

## Past Status

810.000 \$
01.000 φ
81.000 \$
13.500 \$
2,25 \$
6.000

#### Status After Recycling of Wastewater with Miranda Wastewater Treatment System

Savings To Be Gained From The Plant Operation in 10 Yrs. (Dollar):	741.300\$
Plant Amortization Period (Month):	68.700 \$ 15
Estimated Plant and Operational Costs Projected for 10 years (Dollar):	
Cost of Miranda WWTP & Seasonal Operation Cost (Dollar)	6.870 \$
Monthly Operational Charge of the WWTP (Dollar)	1.145 \$
Model of Miranda WWTP to be used: MIRACELL	400
Monthly Capacity of the WWTP (m <sup>3</sup> /month)	6.000
Capacity of the WWTP (m <sup>3</sup> /day)	200

\* Cost of concrete storage tanks are not included in the calculations



You have a right to a clean environment www.miranda-tr.com

# Miranda Wastewater Solutions for Hotels …

## **Operational Advantages**

- Miracell is simple to operate
- Requires a short 1 day training
- Requires minimal maintenance by any person
- System start-up to produce satisfactory treated water within 2 weeks after installation.
- Easy sludge disposal at comfortable frequency.
- System can be serviced by Miranda through local representatives or any trained technical maintenance team servicing the hotel facilities.

## Miranda's Miracell Sewage Treatment System complements the hotel infrastructure by:

- Assisting the hotel to conserve water.
- Save significant amounts from the annual water expenditures.
- MIRACELL sewage treatment plants are made from composites and do not corrode.
- Miracell sewage treatment are lightweight and have a life span of over 15 years.





Water sample from , Robinson Club Maldives

## FEATURES & BENEFITS

- MODULAR 
  SILENT
- DURABLE ODORLESS
- AESTHETIC DO NOT CORRODE



## Can be installed Indoors & Outdoors or buried in ground

MIRANDA recycles waste water in conformity with irrigation norms (BOD 20, COD 120, TSS 30).







## **Operational Costs of the Miranda System**

200 m<sup>3</sup>/day Capacity Miracell Blue W.W.T.P. Operation Cost Table Robinson Club Maldives

ENERGY CONSUMPTION		
A. WASTEWATER TRANSFER PUMP		0,55 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		0,44 kW 2 pcs 6000 m <sup>3</sup> 20 hour 528 kW
Cost Per Month Cost Per m <sup>3</sup>	149,8 TL 0,02 TL	40,4 \$ / Month 0,01 \$ / m <sup>3</sup>
B. MIRACELL GEARBOX & MOTOR		0,25 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		0,20 kW 8 pcs 6000 m <sup>3</sup> 24 hour 1152 kW
Cost Per Month Cost Per m <sup>3</sup>	326,9 TL 0,054 TL	88,1 \$/Month 0,02 \$/m³
C. CHLORINE, CAUSTIC, HCL DOSAGE PU	IMP	0,016 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		0,0128 kW 4 pcs 6000 m <sup>3</sup> 20 hour 31 kW
Cost Per Month Cost Per m <sup>3</sup>	8,7 TL 0,0015 TL	2,4 \$∕Month 0,0004 \$∕m³
D. SAND FILTER FEED PUMP		2,20 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		1,76 kW 1 pcs 6000 m <sup>3</sup> 20 hour 1056 kW
Cost Per Month Cost Per m <sup>3</sup>	299,7 TL 0,0499 TL	80,8 \$/Month 0,0135 \$/m³
E. SAND FILTER BACKWASH PUMP		2,20 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		1,76 kW 1 pcs 6000 m <sup>3</sup> 1 hour 53 kW
Cost Per Month Cost Per m <sup>3</sup>	14 TL 0,002 TL	4 \$∕Month 0,0001 \$∕m³
F. ULTRAFILTRATION		3,00 kW
Power Amount Treated Water Per Month Daily Running Time Energy Consumption Per Month		2,40 kW 1 pcs 6000 m <sup>3</sup> 20 hour 1440 kW
Cost Per Month Cost Per m <sup>3</sup>	408,7 TL 0,0681 TL	110,2 \$/Month 0,0184 \$/m³
Total Annual Energy Cost Total Annual Energy Cost Per m <sup>3</sup>	14,506 TL 0,0681 TL	3.910 \$ 0,0184 \$
FIXED DATA		
Exchange Rate      : 3,71 TL / \$        Daily / Monthly Flow      : 200 m <sup>3</sup> / 6000 m <sup>3</sup> Electric Cost      : 0,2838 TL - 0,08 \$ / k	Absorbed	. Power : 0,8 I Power : 0,8 : 30 days

#### Miranda is proud to assist in saving significant amounts of funds while contributing to the environment.





Miranda is proud to contribute to help keep