

Miranda Wastewater Solutions for Hotels

Robinson Club Maldives Case Study for Miranda STP System

Hotel Design Data

Number of Guestrooms	: 250
Total Population	: 500 people
Water Usage for Capita	: 400 lt / person
Daily Wastewater Flowrate	: 200 m ³ /day
The Quality of Treated Water	: Irrigation
Water Supply	: Desalination
Area to be Irrigated (est.)	: 20.000 m ²

ROBINSON® 
CLUB MALDIVES

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

Monthly Irrigation Water Utilized in Summer Season (m ³)	6.000
Average Amount Paid for Irrigation Water (Euro/m ³)	2,00 €
Monthly Water Charge (Euro)	12.000 €
Seasonal (6 Months) Water Charge (Euro)	72.000 €
Estimated charge to be paid for water in 10 years (Euro)	720.000 €

(Annual inflation percentages have been taken into account in all the projected water charges)

Status After Recycling of Wastewater with Miranda Wastewater Treatment System

Capacity of the WWTP (m ³ /day)	200
Monthly Capacity of the WWTP (m ³ /month)	6.000
Model of Miranda WWTP to be used: MIRACELL	2.000
Monthly Operational Charge of the WWTP (Euro)	1.032 €
Cost of Miranda WWTP & Seasonal Operation Cost (Euro)	6.192 €

**Estimated Plant and Operational Costs
Projected for 10 years (Euro):** **61.920 €**

Plant Amortization Period (Month): **15**

**Savings To Be Gained From The Plant
Operation in 10 Yrs. (Euro):** **658.080 €**

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

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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**
- **CONSUMES LOW ENERGY**
- **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 ³ /day Capacity Miracell Blue W.W.T.P. Operation Cost Table Robinson Club Maldives		
ENERGY CONSUMPTION		
A. WASTEWATER TRANSFER PUMP		
Power	0,55 kW	
Amount	2 pcs	
Treated Water Per Month	6000 m ³	
Daily Running Time	20 hour	
Energy Consumption Per Month	528 kW	
Cost Per Month	149 TL	50 € / Month
Cost Per m³	0,02 TL	0,008 € / m³
B. MIRACELL GEARBOX & MOTOR		
Power	0,37 kW	
Amount	0,296 kW	
Treated Water Per Month	8 pcs	
Daily Running Time	6000 m ³	
Energy Consumption Per Month	24 hour	
	1704,96 kW	
Cost Per Month	483 TL	162 € / Month
Cost Per m³	0,08 TL	0,02 € / m³
C. CHLORINE, CAUSTIC, HCL DOSAGE PUMP		
Power	0,016 kW	
Amount	0,0128 kW	
Treated Water Per Month	4 pcs	
Daily Running Time	6000 m ³	
Energy Consumption Per Month	20 hour	
	30,72 kW	
Cost Per Month	8 TL	2,9 € / Month
Cost Per m³	0,001 TL	0,0004 € / m³
D. SAND FILTER FEED PUMP		
Power	2,20 kW	
Amount	1,76 kW	
Treated Water Per Month	1 pcs	
Daily Running Time	6000 m ³	
Energy Consumption Per Month	20 hour	
	1056 kW	
Cost Per Month	299 TL	100 € / Month
Cost Per m³	0,04 TL	0,01 € / m³
E. SAND FILTER BACKWASH PUMP		
Power	2,20 kW	
Amount	1,76 kW	
Treated Water Per Month	1 pcs	
Daily Running Time	6000 m ³	
Energy Consumption Per Month	1 hour	
	52,80 kW	
Cost Per Month	14 TL	5 € / Month
Cost Per m³	0,002 TL	0,0008 € / m³
F. ULTRAFILTRATION		
Power	3,00 kW	
Amount	2,40 kW	
Treated Water Per Month	1 pcs	
Daily Running Time	6000 m ³	
Energy Consumption Per Month	20 hour	
	1440 kW	
Cost Per Month	408 TL	137 € / Month
Cost Per m³	0,06 TL	0,02 € / m³
Total Annual Energy Cost	16.389 TL	5.518 €
Total Annual Energy Cost Per m³	0,22 TL	0,07 €
FIXED DATA		
Exchange Rate	: 2,97 TL / €	Motor Int. Power : 0,8
Daily / Monthly Flow	: 200 m ³ / 6000 m ³	Absorbed Power : 0,8
Electric Cost	: 0,09 € / kWh	1 Month : 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 Landscape of Robinson Club Maldives greener.