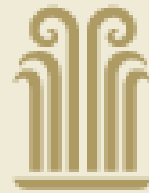


Water Management Case Study



CORINTHIA
HOTELS



Water Management

- Audits were carried out by MBB in our 3 Malta Hotels
- Suggestions / Areas tackled include:
 - Service Water - Guest Rooms etc.
 - Harvested Rainwater
 - Recycled grey and black water
- Focus was initially directed on the quick wins / solutions not requiring major investment

Water Restrictors for Wash Hand Basins



Current Wash Hand Basin Water Consumption

Method of calculating the estimated current consumption:

Guest nights * no. of times used * length of usage * current flow rate
/ 60 secs / 1000 lts

Assumptions:

- Distinguished between Leisure & TO guests and Corporate & Other guests
- Assumed that Leisure & TO guests use the basin 9 times per day and Corporate & Other guest use it 5 times a day

Corinthia Palace Hotel & Spa

Current Flow Rate	9.2 lt / min
Estimated Current Consumption	956 cubic meters
Estimated savings at 59%*	564 cubic meters
Savings from reduced consumption p.a.**	€1,410

* Based on tests carried out

** at a cost of €2.50 per cubic meter

Corinthia Hotel St. Georges Bay

Current Flow Rate	7.33 lt / min
Estimated Current Consumption	1,490 cubic meters
Estimated savings at 18%*	270 cubic meters
Savings from reduced consumption p.a.**	€230

* Based on a reduced flow rate to 6 lt / min

** at a lower cost (compared to the standard €2.50 per cubic meter) since RO water is being used

Marina Hotel

Current Flow Rate	14.4 lt / min
Estimated Current Consumption	2,584 cubic meters
Estimated savings at 71%*	1,835 cubic meters
Savings from reduced consumption p.a.**	€1,560

* Based on tests carried out

** at a lower cost (compared to the standard €2.50 per cubic meter) since RO water is being used

Total Savings from the installation of Wash Hand Basin Restrictors

Total Savings between the 3 properties **€3,200**

% Savings on Estimated Wash Hand Basin Consumption **55%**

Installation of Water Saving Shower Heads



Current Shower Water Consumption

Method of calculating the estimated current consumption:

Guest nights * no. of times used * length of usage * current flow rate
/ 1000 lts

Assumption:

- Assumed that guests take 1 shower a day for a duration of 8 minutes

Corinthia Palace Hotel & Spa

Current Flow Rate	10.3 lt / min
Estimated Current Consumption	6,900 cubic meters
Estimated savings at 28%*	1,932 cubic meters
Savings from reduced consumption p.a.**	€4,830

* Based on tests carried out

** at a cost of €2.50 per cubic meter

Corinthia Hotel St. Georges Bay

Current Flow Rate	6.15 lt / min
Estimated Current Consumption	8,419 cubic meters
Estimated savings at 17%*	1,431 cubic meters
Savings from reduced consumption p.a.**	€1,216

* Based on tests carried out

** at a lower cost (compared to the standard €2.50 per cubic meter) since RO water is being used

Marina Hotel

Current Flow Rate	8.85 lt / min
Estimated Current Consumption	10,375 cubic meters
Estimated savings at 26%*	2,697 cubic meters
Savings from reduced consumption p.a.**	€2,292

* Based on tests carried out

** at a lower cost (compared to the standard €2.50 per cubic meter) since RO water is being used

Total Savings from Reduced Water Consumption in Showers

Total Savings from Water Consumption between the 3 properties	<u>€8,338</u>
% Savings on Estimated Shower Water Consumption	25%

Reduction in the Boiler working hours

The reduced water consumption in showers also leads to savings on fuel from the need to heat less water.

Assumption:

- 50% of the water saved is hot water
- 1 liter of fuel heats up 125 liters of water

Savings on fuel arising from the need to heat less water

Corinthia Palace Hotel & Spa	€6,723
Corinthia Hotel St. Georges Bay	€4,980
Marina Hotel	<u>€9,386</u>
Total between the 3 properties	<u>€21,089</u>

Total Savings from the installation of Water Efficient Shower Heads

Total for the 3 Malta properties:

Savings on Water Consumption	€8,338
Savings on Fuel Consumption	<u>€21,089</u>
Total between the 3 properties	<u>€29,427</u>

Payback Period

Cost of Investment (Basin Restrictors & Shower Heads)	€14,200
Overall Savings (from Basins and Showers)	€32,627
Payback Period	5.2 months

Going Forward

- We will continue to seek water efficient solutions for other areas such as the toilet cisterns- reducing to 6 liters per flush
- We will also evaluate and assess the other recommendations made that require major investment and a re-haul of existing systems / set up



Thank you


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