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date 6th January 2003

pages

copy to / copie à: Barry Salmon – Mercure Continental Inn Broome

concern / objet: Hydrosmart Installation.

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As a follow up to our discussions, summarised below are the preliminary results from the installation of the Hydrosmart system into the Mercure Continental in Broome.

Background

Facility – The Mercure Inn Continental Broome is a resort style property with 60 rooms, extensive food & beverage facilities, resort swimming pool and large tropical gardens (3 acres) located in the centre of Broome. The resort gardens are irrigated by bore water with approximately 50 watering stations operated by a central reticulation system. A subterranean bore provides the water via a 40–mm supply line to the various stations around the resort.

Problem – a change was noticed in the condition of lawned areas and plants in February / March of 2002, with plants and lawned areas turning yellow and dying. At first it was thought to be issues with the lack of water due to the bore drying up. Further investigation revealed that the bore supply had gone salty, and was killing the gardens. Independent water tests were carried out to establish the salt content over a couple of weeks, test results revealed a salt content of 2700 – 2800 ppm. It should be noted that a number of other sites in Broome had suffered from the same problem over the last two years (Broome Hospital).

A decision was made to connect the mains water to the bore in April 2002, and to shut down the subterranean supply. Relevant pipe work alterations were made and the property switched over to “mains supply” in April 2002.

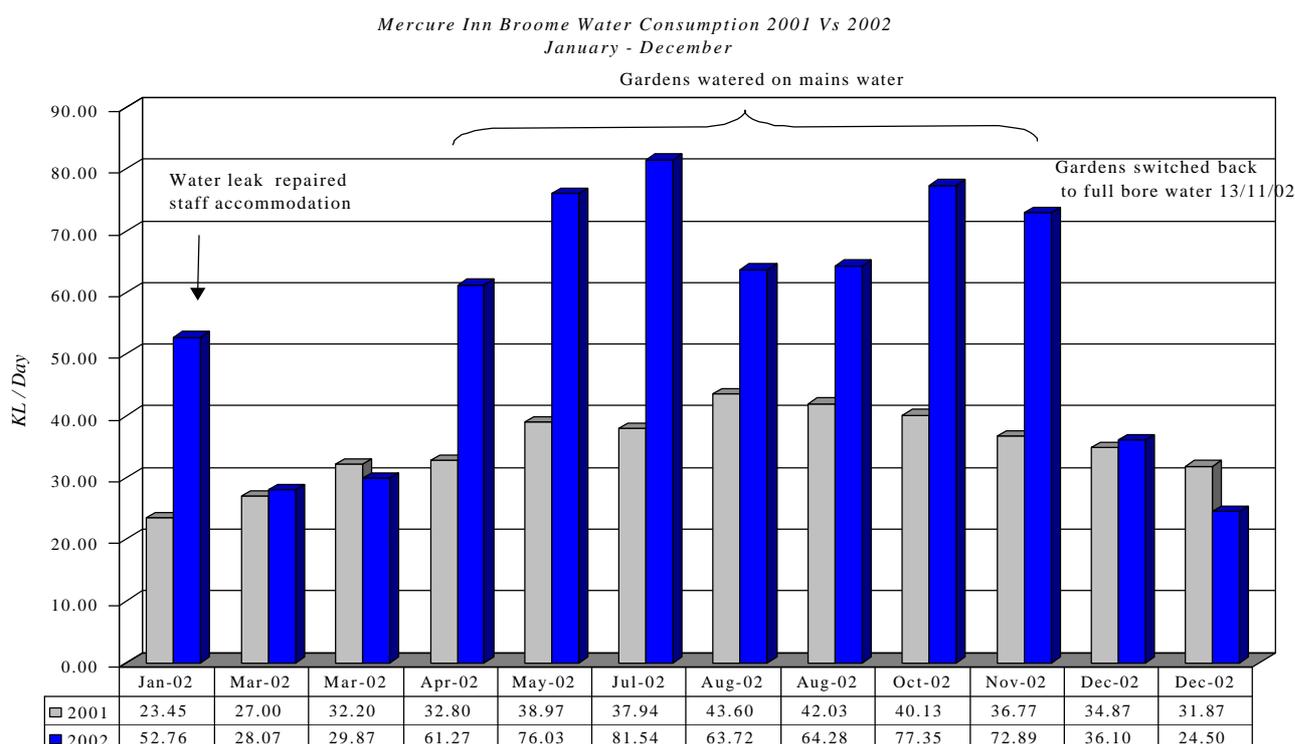
Water Consumption – The increase in the annual water cost was estimated at \$25000 per annum based on existing watering times. A number of options were considered to reduce the impact of increased consumption. The main option being considered, was one that had been successfully used in Broome at other complexes, which had suffered the same salt problem. Installation of a storage water tank to be used to mix mains water with the salt bore water to dilute the water down to an acceptable level. This option was seriously considered but was only a short term solution. There was no guarantee on the salinity levels of the bore remaining stable. If the salt levels increased the mains requirement would ultimately increase as well.

Water consumption at the property follows a winter summer pattern related to business levels at the property. Peak occupancy occurs typically May – September. Note this is the coolest time of the year and in fact has the lowest garden watering requirements for the year.

Water Consumption Table 2002

DATE	Meter Reading	Cons (Kl)	Cons/Day (Kl / Day)	Cons 2000 (KL / Day)	Cost/Day \$	Monthly Cost	Year To Date	%change last year
Jan-02	37113	1530	52.76	23.45	\$72.23	\$2,095	\$2,095	125%
Mar-02	37927	814	28.07	27.00	\$38.43	\$1,114	\$3,209	4%
Mar-02	38823	896	29.87	32.20	\$40.89	\$1,227	\$4,436	-7%
Apr-02	40661	1838	61.27	32.80	\$83.87	\$2,516	\$6,952	87%
May-02	43018	2357	76.03	38.97	\$104.09	\$3,227	\$10,179	95%
Jul-02	45546	2528	81.54	37.94	\$111.62	\$3,460	\$13,639	115%
Aug-02	47521	1975	63.72	43.60	\$87.24	\$2,704	\$16,343	46%
Aug-02	49385	1864	64.28	42.03	\$87.99	\$2,552	\$18,895	53%
Oct-02	51860	2475	77.35	40.13	\$105.89	\$3,388	\$22,283	93%
Nov-02	54120	2260	72.89	36.77	\$99.79	\$3,094	\$25,377	98%
Dec-02	55239	1119	36.10	34.87	\$49.43	\$1,532	\$26,909	4%
Dec-02	55925	686	24.50	31.87	\$33.54	\$939	\$27,848	-23%
	AVERAGE	1695	55.70	35.14	\$76.25	\$2,321	\$27,848	59%

Figure 1. Water Consumption 2001 Vs 2002



Mains water consumption increased on average from approximately 35000 litre / day to approximately 70000 for the period April - November 2002. Based on this actual additional usage, annual increase was calculated at 14000 KL (\$19000), which was 20 % lower than originally estimated.

Hydrosmart

A hydrosmart unit was installed in October 2002 to the 40-mm outlet pipe of the bore system. Water stations were re-configured such to test the effect on the main lawned area at the back of the hotel (1 acre). Area was watered on Hydrosmart treated water for a period of 6 weeks with positive results. Various sections of the garden areas were gradually added to the treated system by altering the watering stations. A final test was carried out on the extensive plant nursery the property has to propagate its own plants. The nursery was hand watered with treated water and the test proved successful and had no detrimental effect on the nursery plants.

The bore system was 'fully reinstated' on the 13th November, utilising Hydrosmart treated water.

Water tests were carried out every week to measure the salt content, and increased gradually over the 6-month period.

April Reading	2700 ppm NaCl
November	3100 ppm NaCl

Results indicated that the water appeared to get saltier over the 6-month period. Tests carried out in November after the system was reinstated, showed no change in salt levels at 3100 ppm NaCl.

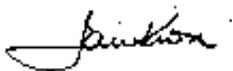
The maintenance Manager at the property who has a horticultural background has indicated that the gardens appear to have been give a "nitrogen shot", and appear to have greened up significantly. Note the maintenance manager was the head groundsman at the hotel for the last 6 years.

Conclusion

While the treatment process has only been in place for some 2 months, property personnel are confident the results will continue and the plants will remain healthy. The property is continuing to monitor the salt levels of the bore regularly to determine if any major change in the subterranean water supply occurs which may eventually effect the gardens at some point in the future.

I will keep you informed as to the ongoing results.

Kind Regards



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