

# DENNIS SIMMONS TOTAL MANAGEMENT

P.O.BOX 897 SOUTHPORT MAIL CENTRE QLD 4215  
Phone (07)3287 3556 Fax (07)3807 6072 Mobile 0409 644 193 Email totmands@ozemail.com.au

## Report on Potential Water Savings

### Public Toilets

This report was Commissioned by Mr Clint Lutter of the Gold group who is acting for Mr Neville Donaldson in the matter of his water saving invention. The Commission was to determine the saving in water that would be generated in public places such as Shopping centres, Accommodation facilities, Schools, Govt Departments, Offices and beaches.

The methodology used was random sampling of people movements in shopping centres, research at the Library and information on the internet. In random sampling of shopping centres I used a number of centres on the Gold Coast and checked numbers of people entering them over a given period of time and the number of people entering toilet areas in those centres.

I attempted to find the statistics of what numbers entered centres weekly but could not find anyone who could give me that information. All the information put together has been obtained on the Gold Coast in suburban centres away from the main tourist areas so I believe these results would be consistent for suburban Australia as a whole.

### Statistics.

As at the year 2005 the population of the Gold coast was reputed to be 500,000 people; this makes Gold Coast the 6<sup>th</sup> largest City in Australia. There are a number of shopping centres of various sizes so I chose a variety of small medium and large centres in the area. Time and constraints of cost limited the samples I took but I believe that there is sufficient accuracy to draw the conclusions I will set out in this report.

### People volume:

I took population volume in a small centre and a larger centre namely Beenliegh Markets and Australia Fair. The samples were taken mid-week when volumes are possibly at there smallest.

Beenliegh Markets averaged 690 people an hour through both entrances.

Australia Fair averaged 2238 people per hour at the two main entrances.

### Toilet entries:

To measure this statistic I sampled Nerang Rive Plaza, Logan Hyperdome, Beenliegh Markets, Beenliegh Mall and Australia Fair. The samples again were taken mid-week randomly over a period of 27 days.

Nerang River Plaza averaged 50 people per hour (1 toilet area)

Logan Hyperdome averaged 930 people per hour (5 toilet areas)

Beenleigh Markets averaged 298 people per hour (2 toilet areas)

Beenleigh Mall averaged 60 people per hour. (1 toilet area)

Australia Fair averaged 798 people per hour. (6 toilet areas)

Male Female split: I split the counts between males and females as there is possibly a difference in what savings could be made between male and females toilets.

Males comprised 33.333% of those using toilets .

Females comprised 66.666% of those using toilets.

Other relevant statistics are as follows:-

In 2004 there were the following accommodation bed places.

Hotels 19,882	@75%	14912
Motels 5,230	@75%	3923
Apartments 17,171	@75%	12878
Flats 23,850	@75%	17888
Caravans 15,850	@75%	11888
Hostels 1,250	@75%	938

At the 2001 census there were the following numbers at Tertiary institutions:-

Infants /Primary Schools	37116
Secondary Schools	23501
TAFE	7675
University and others	13290

Time precluded doing meaningful sampling of beaches and libraries and it was not possible to ascertain the number of offices, restaurant, licensed club, hotel bar or shop staff toilets and toilet usage. With over 47 Km's of Beach on the Gold Coast and 1000 licensed clubs in Queensland the effect on water usage is more than significant. This being the case these figures will be very conservative while still showing significant water savings. I would not like to hazard a guess as to the understatement though.

### **Water savings:**

Appendix 1A shows the results of the sampling done. The breakdown between the various areas reported on, and the expected annual savings in Kilolitres, is shown in Appendix B and finally in appendix C we can see the total expected savings for Australia by the use of the Device and this is added to the household savings we have already identified.

It is my opinion from this that potential savings for the Cisternlink Aquasave Device is in the order of 14,553,000 Kilolitres in the areas that I have been able to measure. This volume reported, I would suspect, only covers about one quarter of the total useage of water in toilets as I have not taken into account a number of areas that use significant amounts of toilet water.

Areas that have not been taken into account are:-

- Centre shops that have their own toilets for staff use.
- Offices.
- Libraries
- Industrial and manufacturing workplaces.
- Beaches and other public park areas.
- Any other place that has toilets not mentioned in this report.

In my first report dated 23.11.04 I identified potential savings of 75,360,000 kilolitres of water in household water savings. In this current report I have identified a further 14,553,000 Kilolitres of water saving and estimated that this may only represent one quarter of the total commercial toilet use of water. This means that I believe that there is a potential water saving of (14,553,000 x 4) litres commercially and 75,360,000 domestically a total savings 133,572,000 kilolitres in total each year.

I am not sure of the rates of water charges other than for domestic Gold Coast and these are \$0.95 per Kilolitre. For the amount of water this report has shown as potential savings due to the use of the Cisternlink Aquasave Device this would mean a saving to consumers of \$127,000,000, approximately, per year over the whole of Australia.

### **Conclusion:**

This commission was to obtain more clarity in the potential of The Cisternlink Aquasave Device. I feel that the findings of this report back up the findings of the original report that was based on domestic use only. Time restrictions and logistics meant that there have been a number of assumptions made but in each case those assumptions are believed to be conservative.

Attached to this document are resource documents from which I have gleaned information and the results of random sampling are to be seen in Appendix 1A.

It is my opinion that the installation of this Device will result in great saving for those who install it and for Commercial Enterprises has the potential to increase their bottom line profit.

**Attachments:**

Appendices 1A – 1C

Relevant Results from the 2001 Australian Census.

Gold Coast City 2001 First release Census results.

Midwood Gold Coast New Dwellings and Population Growth and Gold Coast Visitor Data February 2005.

I attach a '*Water Resources and Use in Australia*' Document that I ended up not using.

Report Researched and written by.  
Dennis Simmons

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13.03.05