

# A pioneer in large-scale seawater flushing

## WATER SUPPLIES DEPARTMENT

Water supply is precious. Nobody who experienced the water-supply restrictions of four hours in every four days during the severe drought of the 1960s would ever disagree. In fact, Hong Kong has never been self-sufficient in fresh water supply, yielding only about one quarter of the local demand in a normal rainfall year.

To tackle the serious water shortage problem, the Water Supplies Department implemented an innovative project of developing a seawater flushing system, as a fresh water substitute, in Hong Kong.

Thirty-seven seawater pumping stations and a completely separated reticulation network have been constructed. In 2003, 241 million cubic metres of seawater was supplied for flushing. Today, about 80% of Hong Kong's 6.8 million population uses seawater for flushing, thus effectively reducing the demand for fresh water by as much as 20%.

The success of the seawater flushing system has won Hong Kong international acclaim. In 2001, the Chartered Institution of Water and Environmental Management awarded the department the prestigious Chris Binnie Award for Sustainable Water Management in recognition of its achievement. The institution is a leading United Kingdom-based independent multi-disciplinary professional and examining body for scientists, engineers, and other environmental professionals committed to the sustainable management and development of water and the environment. The department's seawater flushing system was the first winner of the Chris Binnie Award outside Europe.

Today, seawater continues to play an important role in Hong Kong's water management and is a sustainable water resource with a growing potential for practical uses, such as water-cooling in air-conditioning systems for government seafront buildings and seawater desalination. Hong Kong is still the only city in the world using seawater for flushing on a city scale.

*Residents queue for water during the drought of 1963-64.*



*Before the official launching on 1 January 1965, the seawater flushing systems were primitive and simple. Here was an example at Kai Tak Airport in 1960.*



*Assistant Director (Development) of the Water Supplies Department, Mr C C Ku (right) receives the Chartered Institution of Water and Environmental Management Award from President Ronnie Falconer (third from right).*

## Foresight rewarded

A Senior Engineer with the Water Supplies Department, Mr M C Wong, said it was an honour to receive the award, which recognised the department's foresight four decades ago.

Hong Kong has been using seawater extensively for toilet flushing for four decades. The system is seen as an effective way to conserve fresh water. Hong Kong has assumed a leading role in utilising water resources in a sustainable manner and has set a good example for other cities particularly those with insufficient fresh water supply.

“Tribute should be given to our predecessors who had the vision to pioneer the project. We will follow their endeavours to explore further utilisation of seawater in Hong Kong,” Mr Wong said.



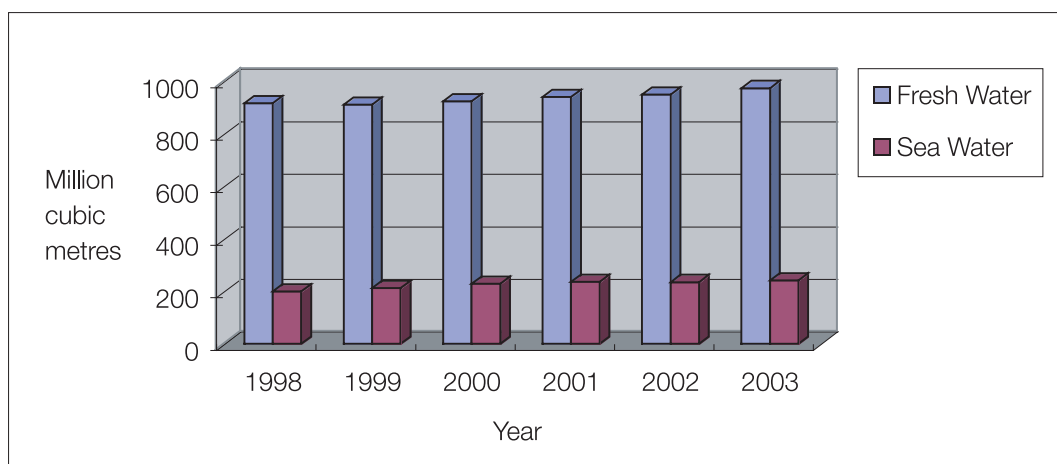
*The Chris Binnie Award for Sustainable Water Management.*

## Precious water saved

Apart from water conservation, using seawater for flushing is also economically viable.

“The system is both environmentally friendly and cost-effective,” Mr Wong said. “Last year alone, it saved 241 million cubic metres of fresh water, which was worth some \$700 million.”

He pointed out that fresh water was particularly scarce in Hong Kong in view of high demand. In July last year, a peak daily consumption of 2.91 million cubic metres was recorded.



*Annual freshwater and seawater consumption in Hong Kong.*

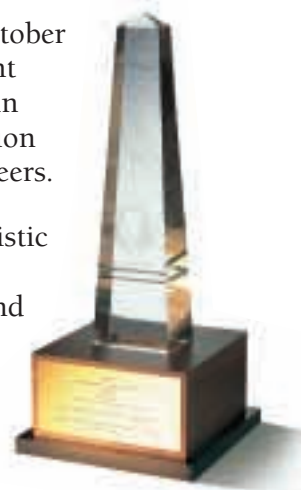
“The economic loss and inconvenience in the case of water restrictions would be tremendous,” remarked Mr Wong. “It is therefore important for us to plan properly for a steady and reliable water supply.”

## Quality water provided

In addition to the seawater flushing system, the department's dedication to providing the people with clean water of an international hygienic standard has also won world acclaim.

The Ngau Tam Mei Water Treatment Works, completed in October 2000, is one of the most advanced water purification treatment plants in the world. It won the Superior Achievement Award in the 2001 Excellence in Environmental Engineering Competition organised by the American Academy of Environmental Engineers.

The judges took into consideration a number of criteria – holistic environment perspective, innovation, performance and client satisfaction, and contribution to an improved quality of life and economic efficiency. Among all the entrants, the Ngau Tam Mei Water Treatment Works received the highest scores for all six categories, namely Research, University Research, Planning, Design, Operations/Management and Small Projects.



*Ngau Tam Mei Water Treatment Works won the Superior Achievement Award.*

“It is really a miracle for this grand award to be given to an overseas project outside the United States. The commendation affirms that our work is of an international standard,” Mr Wong said.

## World-beating technology

Ngau Tam Mei Treatment Works is the first such facility in the world to use Granular Activated Carbon (GAC) to nurture bacteria for the removal of ammonia from water and it is also the first water treatment plant in Hong Kong to use ozone, produced on-site, for primary oxidation and final disinfection. The state-of-the-art Ozone Injection Contactor, which greatly reduces operating costs and the risk of gas leaks, won the Grand Award in Research from the American Civil Engineering Council.

The treatment plant provides a maximum of 230,000 cubic metres of water per day to over 300,000 people in its respective supply zone. “Our mission is to provide quality water to our citizens. In addition to full compliance with the World Health Organisation's standard for drinking water, we will continue to seek ways to deliver water in an economically and ecologically effective manner,” Mr Wong said.



*The Ngau Tam Mei Water Treatment Works is one of the most advanced treatment plants in the world.*

## World-class productivity

Water Supplies Department won the “2003 Hong Kong Award for Services: Productivity” from the Hong Kong Productivity Council in January 2004 in confirmation of the department’s service productivity achievement. Since the inauguration of the award in 1997, only world-class organisations from the private sector have won the award. The department was the first non-trading fund government department winning the award.

The award was based on four assessment criteria: Productivity Leadership; Customer Focus; Service Productivity Management and Improvement System; and Results. The Central Judging Panel commented, “Water Supplies Department establishes the environment for continuous productivity improvement and encourages staff involvement in the improvement process. The department utilizes the ‘Information System Strategy Study’ and the ‘Feasibility Study of Customer Service Program’ to identify, document, analyse and improve its work processes. Knowledge management is facilitated through the establishment of the WSD Knowledgebase in the intranet, a database of summaries of journals, research papers, new products, findings, etc. to promote knowledge sharing among staff.”



*“2003 Hong Kong Award for Services: Productivity” from Hong Kong Productivity Council.*

## Public relations and IT awards

PR-wise, the department also scores well. It won top prize for the 10-minute anniversary video ‘150 Years of Water Supply – We Care for You’ in the audio-visual category of the Public Relations Awards Competition organised by the International Water Association in 2001. The video was produced in three languages – English, Cantonese and Putonghua – to celebrate the 150th anniversary of water supply in Hong Kong.

The anniversary celebrations also earned the department top honours in the Public Sector category of the Public Relations Competition organised by PR Week in 2001. In fact it was the first time that a government department in Hong Kong had ever won a PR Week Award. PR Week is a renowned international public relations magazine and its awards are highly regarded in the public relations industry.



*International Water Association Public Relations Award 2001.*



*A pioneer in large-scale seawater flushing*

The department's annual reports are also award winners. Its 2000/01 report won the bronze award of the 16th International ARC Awards – the Academy Awards of Annual Reports – in the non-profit organisation category in 2002; and its 2001/02 report won a silver award in the 2003 Design Excellence Awards in the 13th International ASTRID Awards Competition.



WSD's 2000/01 annual report won the bronze award of the 16th International ARC Awards.

The SAS Institute of Hong Kong – the world's largest privately-owned software company – presented the department with the Information Management Business Intelligence Award in recognition of the department's commitment and drive to enhance its IT systems and improve the efficiency and quality of service delivery.



WSD won the Information Management Business Intelligence Award.

Within the government, the department also won the Most Informative Gold Award and Best Overall Bronze Award in the 2001 Performance Pledges Awards organised by the Efficiency Unit. Moreover, WSD won the second runner-up of the 2001 Customer Service Excellence Award organised by the Civil Service Bureau.



WSD won the Best Overall Bronze Award in the 2001 Performance Pledges Awards organised by the Efficiency Unit.

The success of Water Supplies Department together its numerous awards received are strong evidences of a world-class service provided by the HKSAR Government.