

The Standard

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Most of Hong Kong's water supply is imported from Dongjiang, Guangdong.

WE'RE FLUSH WITH WATER NOT BEING ALL AT SEA

Continuing with my theme on how Hong Kong is combating our water supply problem, let me describe measures that had been taken to ensure we have an adequate supply for our daily consumption.

The water supplies department was aware of the inadequacy of solely relying on collecting rainwater, and alternative supplies had been sought since the 1960s, when restrictions were imposed.

One extremely effective solution is to buy water from across the border.

This involved a lot of issues: costs, technical and political aspects. I shall try and describe them in my next article.

A more innovative solution is the use of seawater to flush toilets. This scheme, conceived in the early 1960s, significantly reduces demand for freshwater.

Hong Kong is the world leader in this regard, taking advantage of our proximity to the sea.

But this comes at a price. Not only do we need a comprehensive pumping, piping and filtration system, ensuring the appropriate pressure to bring about supply reliability, but all of our flushing system equipment would have to cater for saltwater corrosion.

Fortunately, our competence in naval applications, and our stringent standard of plumbing, ensured long term use of seawater without undue damage to our toilet equipment.

The system is a bit more complicated than just drawing water from the harbor and pumping it to our roof tanks.

First, seawater has to be filtered to remove any solid materials, as harbor water is known to come with rubbish.

Second, to ensure seawater stored at homes before it is used for flushing is hygienic, it is dosed with chlorine for disinfection and to prevent the growth of algae and small shellfish.

It would be a huge issue if such creatures were allowed to grow in our



Nuts and bolts

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plumbing systems. They would block our flushing water pipes and would be impossible to remove, resulting in expensive repairs.

With such precautionary measures, the seawater that we use to flush our toilets is almost as clean and odorless as freshwater, and most people would not even notice the difference.

This successful application of seawater makes Hong Kong almost unique in reducing the need for freshwater, to the envy of many cities.

Many other countries and cities have sent people to learn our system, but due to constraints, they are unable to avail themselves of this unique application.

For Hong Kong, we just do not know how lucky we are, as it significantly reduces our need for freshwater.

For your information, our present mix of water sources is 21 percent supply from rain, 57 percent imported from Dongjiang, Guangdong, and 22 percent from the sea.

One other price we pay for a reliable water supply is in power consumption.

The department has consistently been among the top two to three largest electricity consumers in Hong Kong.

But this must be seen in the light of the present Hong Kong system.

Our hilly terrain, together with the huge quantities of water required in the residential areas, some of which are located at high elevations, consumes a lot of power to lift the huge quantity of water to these locations.

We should be thankful to the authorities and the engineers for ensuring our water supply, despite the inherent difficulties.

Veteran engineer Edmund Leung Kwong-ho casts an expert eye over Hong Kong's iconic infrastructure