Water Sustainability and Resiliency, A Plumbing Challenge of the 21st Century.

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When the Spaniards stepped on the Philippine islands in the 15th century, it was written and described as the land of abundance: food, water and gold.

Approximately sixteen million hectares of the total thirty million hectares land area are classified as forest land. Presently, almost sixty percent are deforested. Restoration efforts are being implemented as the people have realized its effect to the nature.

Development is the main cause of these changes. There are already subsidence observed on highly urbanized areas. Ground water extraction shares a partial contribution to this land sinking. Seas along the coastlines are projected to be at risk of being identified as a marine dead zone as observed on model urbanized countries.

The Philippines is known worldwide for its resources' diversity and endemic flora and fauna to name a few. Rock eating worms were recently discovered, the smallest fish, the smallest primate, the largest flower, and the largest eagle were on the list. Sadly, development threatens and endangers all these unique creatures.

However, development is already here as we cannot prevent it from coming; hence, we should do it correctly with sustainability and resiliency in mind. Any building whether residential, educational, institutional, commercial, industrial or place of assembly, requires plumbing system for occupancy. Plumbing installation requires the transfer of potable water to the building and discharges sewages out of the building. Prior to potable water entrance, it passes through a series of processes to pass a potability standard test. Discharging it to bodies of water also passes through a series of the same sanitation processes passing a ten-parameters compliance set by the resource's bureau.

Most of the new constructions are required by law to have a rainwater harvesting facility while public-works construct the roadway-cistern on highly urbanized cities both for the purpose of water storage and flood water reduction.

Modern plumbing system are required by code to have a minimum of fifteen pounds per square inch pressure to make the plumbing fixtures function. Some of the local water service utilities have less than the minimum pressure especially during water ration times. Most local water utility, however, don't have a pumping station that it is almost impossible for an ordinary subscriber to extract water from the tap. They experienced a vacuum due to direct pumping of well-to-do homes.

How the Philippines differ from the rest lies on the belief that Filipinos are both patient and thrifty. They would wait on ration of water utilities, endure low flow, and or low service pressure. Frugality is required for survival as reflected in a quote "Habang maikli ang kumot, matutong mamaluktot" – "While the blanket is short, learn to bend under it."

In the Philippines, ancient household items such as pail and dipper are both used for kitchen and hygiene. Culturally, it is an Asian norm that is sometimes misunderstood as it is believed that water splashes on the toilet cubicle contaminates the floors and fixtures. However it requires skills not to litter and fix-up after bathroom or toilet activities.

Some European plumbing have bidet. A bidet hose and head was introduced recently. So far, those two Filipino ancient household wares previously mentioned are proven; the most efficient in terms of water consumption. It could flush a toilet with only a scoop or two which equals to half or a quarter gallon of water as compared to modern pressure assisted flush tank technology which flushes on a gallon of water. Also, one can take a bath with a four-gallon pail using a "tabo"- dipper, while a three minutes very quick shower consumes six gallons of water.

As a master plumber, it corresponds that these ancient wares that was utilized by most of the Filipinos will become extinct due to introduction of modern plumbing system - running water, despite its being present on every households. When water supply falls short, the pail and dipper are recalled from storage. Not only does this help conserve water, but also helps control water consumption.

It may be a little crude, but in order to defeat water shortage, the world can adopt the use of these Filipino ancient housewares "timba at tabo" - pail and dipper. In times of recession and limited water supply, this is how the Filipinos survive the dry season.

Modern "timba at tabo" and ancient "banga at tabo" figures courtesy of Google.

National Master Plumbers Association of the Philippines, Inc. (NAMPAP,Inc.) Upcoming Events

Mindanao Conference, 17 August 2019, Hotel Tavern Surigao, Surigao City

CPD Seminar, 28 September 2019, Express Inn Osmeña, Cebu City

84rth Anniversary and National Convention, 15-16 November 2019, Century Park Hotel, Manila

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