

Global Efforts in Urban Waste Management

From simple recycling bins to high-tech pneumatic tubes, cities around the world are employing a variety of strategies to manage their garbage
by Geraldine Matabang

FROM PINOYS ABROAD

Filipinos working or studying abroad share urban waste management strategies they have encountered in other countries. Their experiences and insights on waste management especially in developed countries highlight the difference with local practice but also give an assortment of ways on how we could more successfully manage our wastes.



INCINERATION AND USE OF RECYCLED SHOPPING BAGS IN SINGAPORE

by Kenneth Barrientos, architect now working in Singapore

Final waste disposal in Singapore is usually via landfill and incineration. Their incineration system is quite effective and non-polluting. We live near the Ulu Pandan Incineration Plant and I rarely notice any dark smoke coming out from the high chimneys.

Garbage segregation facilities are in place and recycling is still by old-fashioned way of *bote-dyaryo* (glass-newspaper collection) similar to the Philippines, but using vans instead of *kariton* (carts). Sometimes schools will organize collection drives where they will leave a garbage bag with a note outside your door stating the collection date of used paper and plastics.

In some grocery stores, they encourage shoppers to use woven or recycled bags to minimize the use of plastic bags. Unfortunately, this is not as effective as most cashiers themselves will hand out extra plastic bags upon request. Ikea has an Earth Day program where they tell the customers to bring their own shopping bags because they won't be issuing any plastic bags for packaging even for the smallest item. The store is very strict with this policy despite initial complaints from shoppers. Maybe it also helps that shoppers have no choice because the store is still the best place to get home furnishing

HOUSEHOLD HAZARDOUS WASTE SEGREGATION IN GUAM, USA

by Jerry Estrella, mechanical engineer now working in Guam

Guam has a landfill but all recyclable items are sent to China for recycling

Waste management is hardly a 21st century phenomenon, as records show the earliest landfill was created way back in 3000 BC. In the beginning of the twentieth century, proper disposal of waste was mainly an issue of public health and sanitation. Today, with the advent of globalization, electronic communication and disposable consumer items, waste has become a complex problem and is now more prominently taken as a matter of environmental sustainability. The quantities and composition of wastes people generate on a global scale presents a major ecological concern as more waste mean greater pressure on the environment's capacity to cope with the damaging impacts of waste disposal.

Modern production and consumption trends have also led to new categories of waste stream that now includes hazardous wastes, e-wastes, and hyperbulk wastes. But what ends up in our trash bins and how we eliminate waste differs from place to place, depending on one's economic status and lifestyle. Rich countries consume more and therefore they accumulate

because the island is too small. Even used cooking oil should not be thrown into the sink because there is someone who collects it for recycling. Restaurants are required to have external grease traps.

Household hazardous wastes such as batteries, paint cans, refrigerators, household chemicals, tires, etc. should not be thrown into regular trash cans because ordinary wastes are brought to the landfill. It's not like the Philippines where you can throw anything you like into the trash. You have to bring these items to the Household Hazardous Waste Facility so they can ship it to China.

PNEUMATIC WASTE COLLECTION IN BILBAO, SPAIN

by Dominic Villanueva, architect who finished his graduate studies in Spain

The practice of pneumatic waste collection really amazes me. I saw it in operation in Bilbao, Spain. Barcelona is also moving towards a more comprehensive citywide network. The system works like this: 1) you segregate your trash; 2) go to your street's corner where there would be different tubes, one for each type of garbage—organics, plastics, and bottles; 3) open the appropriate chute, put the trash in and pull the lever; and 4) your trash will be sucked directly at high speed into a "trash factory" which could be miles away! This minimizes energy wasted in garbage collection, as well as noise pollution, air pollution, etc.

One thing I don't really approve of in the Philippines is the house-to-house collection of trash; it is very cumbersome. I think there should be a neighborhood trash center which will not only minimize collection routes but also make people more aware that their trash is also their problem and not only the *basurero's* (garbage collector).

RECYCLING AND BOTTLE DEPOTS IN VANCOUVER, CANADA

by Ogie Punzal, architect now working in Canada

You have to apply to the Vancouver city government if you want your recyclable items to be collected. They will give you the right containers for the recyclable items. These are colored blue, approximately 2ft. x 2ft. x 4ft. with two wheels. The collection trucks here have a lifting arm to pick up

more waste. Global trends also show that as countries get richer, the share of organic waste decreases and the paper and plastic wastes increase. This consumption pattern represents an unsustainable practice for waste management because non-biodegradables require more landfill space for disposal. It is said that one plastic bag takes one second to manufacture, 20 minutes to use, and 100 to 400 years to degrade naturally.

Strategies that seek to curb over-consumption (and lessen the amount of waste generated) include promotion of the three Rs (reduce, reuse and recycle) in the production and manufacture of goods, and integrating a polluter pays principle in the pricing of goods wherein people, as consumers of waste-generating goods, are forced to pay more for the management of waste. The lifecycle approach to waste management (reducing waste output at every stage of a product's life from its production, distribution, use, until its final disposal) also helps conserve resources and minimize the environmental impacts of waste.

these standard-sized containers. Only two people operate these trucks—one driver and another person who picks up the containers. They pick up the segregated newspapers, miscellaneous papers, glass, and plastics once a week. A different team of garbage collectors picks up the solid waste and recycled waste.

You have to pay an additional deposit (approximately 5 cents per bottle or tetra pack) for all drink containers. To get the deposit back, you have to return the bottle to the bottle depot. The milk container is an exception; they don't pay you when you return these, and I don't know why. I had a funny experience during my first time to return bottles to the depot. I brought in catsup and patis (fish sauce) bottles and was informed that only drink bottles were accepted. I miss our *bote-dyaryo* (glass-newspaper collection) guys who go around the neighborhood because they pay for my catsup and patis bottles as well as my old newspapers.

SECOND-HAND SHOPS AND WASTE SEGREGATION IN LEUVEN, BELGIUM

by Arlene Lusterio, architect-planner who finished her graduate studies in Belgium

For a student from a developing country, a €1 drinking glass or set of spoon and fork is quite expensive. But for those who are practical, there is a second hand shop called SPIT—a center for reusable items such as kitchen utensils, clothing, wood planks, study lamp, sofa, bed, books, turntable discs, bicycles, you name it. It operates all over Flanders, Belgium.

Garbage collection is scheduled for specific waste types which are packed in color-coded garbage bags. Recyclable plastics and metals are packed in the transparent blue bag. Paper and cardboard are kept dry and uncrumpled, and placed in a cardboard box. Unsegregated wastes are placed in the brown bag. All garbage bags carry the logo of the Town of Leuven and are sold in any grocery store. Under the polluter pays principle, the most expensive bag is for unsegregated wastes. The green bag costs €0.30 for a roll of about 20 large bags while the brown bag costs €20.00 for a roll of 10 medium-sized bags! Glass is not collected; instead it is deposited in a glass collection bin. Two glass bins are provided, one for clear and another for brown glass. Supermarkets also accept returned glass bottles and pay back €0.25 to €0.50/piece depending on size. Wrongly segregated trash is not collected and instead is stamped with a sticker informing the owner that he has to remove

Developed countries such as Germany, Belgium and Japan are already leaders in advanced waste management strategies that require high levels of technology and significant budget, such as non-polluting, energy-recovering landfills and incineration plants. With the need to wisely use limited natural resources, integrated waste management strategies such as segregation, recycling and other waste reduction programs are also in place and their industries and citizens have already adapted well to strict waste policies. The Philippines still has a long way to go in developing these kinds of sophisticated waste management schemes. Successful waste reduction programs are not expected to happen overnight as can be learned from their experiences. Important lifestyle changes are needed to move towards a more disciplined and recycling-conscious society and perhaps the transformation can happen with continuous awareness-building, incentive-driven programs and enforcement of regulations for sound waste management.

contents that are not supposed to go with the bunch such as a foil-lined cardboard in a blue bag.

Bulky wastes such as study tables, mattresses, sofas, wooden planks, book shelves, and kitchen shelves are collected in a truck trailer strategically parked in the university parking lot at the end of semester when international students start to leave home after finishing their course and when such wastes are expected to be generated. These items are brought to SPIT for repair, cleaning, and selection, and are sold as "second hand" to the next wave of university students at drop dead prices. You can buy a leather high-backed couch for €0.50! But there is no delivery service. This is easily solved by student ingenuity: two supermarket flatbed carts from a nearby supermarket and some friends. Really good finds are normally bidded out to the best buyer. Bidding is scheduled and goods are displayed early on to give a chance to prospective bidders to pick their choice and compare prevailing prices. How about packaging? SPIT patrons come with old newspapers and sando bags from supermarkets and deposit them at the cashier's counter. So even packaging is also recycled.



BIKE LANES IN LEUVEN, BELGIUM

SEGREGATION AND WASTE WATER TREATMENT IN VIRGINIA, USA

by Gerard Matabang, medical technologist working at a hospital and at Starbucks in Virginia, USA

Here in Loudoun County, Virginia, we have separate trash bins for recyclables and common waste. The waste is collected twice a week while the recyclables are collected once a week. It's the same thing at Starbucks; there are separate bins for recyclables but these are picked up everyday because commercial trash accumulates faster. Almost all trash is sent to a landfill. While driving around the countryside, I saw the landfill. Ang linis! (It looked so clean) It was so unlike our dumpsites in the Philippines.

We pay for sewer management. I think all liquid waste goes into a centralized sewage piping system, then into a treatment facility where they are filtered and released into the environment (usually open water areas). The county sanitation website (www.lcsa.org) explains the technology used for waste water treatment. ■