



By Bob Ferguson

Simple and effective
sanitary solutions

Worldwide Water Effort

If you are reading *Water & Wastes Digest* and this column, you are a professional in the water or environmental industry and have likely been confronted with many challenges finding ways to deliver clean water or solve difficult environmental problems. Every day there are new issues and technical challenges, whether they are water scarcity, emerging contaminants, water conservation, energy costs or others too numerous to list. I would nonetheless argue that we are better positioned to deal with these issues than ever before as we have more resources and technology than in the past.

But as we consider the problems currently facing us, I think it is important to remember that this so-called “modern era” of advanced water and wastewater treatment really only extends to half of the world’s population. While this era exists in the developed world, it does not yet fully in the developing world.

Staggering Figures

Many of us have heard the statistics, but they are worth repeating because they are so shocking. Unsafe water and poor sanitation will kill more young children this year than malaria, AIDS and accidents combined. Most deaths come from diarrheal disease, and 90% of the victims are children under five. No more than half of the world’s households have water at home and nearly 3 billion people do not use improved—let alone modern—sanitation.

Clearly there are many good people and organizations that want to help, and there are many who are doing good work in this area. But work in the developing world is far different from work in the developed world. In my first column, I discussed rainwater and water conservation devices and how some of these technologies may be appropriate in some areas and less appropriate in others. This also rings true when applying technologies from the developed world to problems in the developing world.

There are some famous examples of projects in which advanced technology was brought into a region only to see it fall into disrepair and disuse for lack of operating expertise or resources for replacement parts and maintenance. But there also are many examples of options that are clever in their simplicity yet very effective in solving a critical water or sanitation problem.

As I mentioned, billions of people around the world lack access to sanitation facilities. This leads to water contamination and the spread

of gastrointestinal disease on a large scale. Advanced sewerage treatment is not an option, but a simple solution could offer an alternative.

From Obstacle to Opportunity

A group known as Arbor Loo has been highlighted in print and at water and sanitation conferences over the years, but I think its efforts bear repeating. For those unfamiliar with the term, “loo” is the British term for toilet. An Arbor Loo is essentially a temporary toilet facility built in a small hut or other enclosure over a hole in the ground about the size of a 5-gal bucket.

Once the toilet has been used to capacity, the hut is moved, a new facility is established a short distance away, and a fruit tree suitable for the local climate is planted at the site of the now-closed toilet. Sanitation and contamination issues are controlled and, over time, evolve into a productive grove of fruit trees. The system turns a negative into a positive that is manageable in third-world conditions.

A friend of mine who frequently takes mission trips told me about another group using membrane technology to create a simple, no-power device for drinking water in emergency situations or difficult environments. The device, called a Hydropack, is a semi-permeable membrane pouch filled with concentrated drink solution (think Gatorade syrup). These pouches can be placed in untreated bodies of water. Through osmosis, water diffuses through the membrane and creates a drink within the pouch. In fact, the device has been used in Haiti’s hurricane response. The company behind it—HTI—features a photo on its website of a swimming pool with many pouches floating on the surface, turning non-potable swimming pool water into a drinkable beverage without power, additional equipment or other infrastructure. It is simple, yet effective.

I don’t have any connection whatsoever to either Arbor Loo or HTI. I only find these to be clever, yet simple solutions to water and sanitation issues—particularly for the developing world. I am sure there are many more. If you have any examples, I’d like to hear about them. www.wwd.org

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