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DESIGN

Creating solutions to a water crisis

By Alice Rawsthorn

LONDON

The first thing you see is shelf after shelf of plain glass bottles all containing different colored liquids. Some of the liquids are clear, and others whitish, yellowish, brownish, greenish, or almost black. The colors change daily, as does the consistency, and whatever is growing inside.

All of the liquids are exactly the same thing — water. To be specific, they are examples of the 1 percent of the world's water that is available — and deemed suitable — for human consumption. These samples are displayed at the start of "1% Water and Our Future," an exhibition at Z33, a design and art gallery in the Belgian city of Hasselt, which explores our relationship to water, and how design can help us to use it more responsibly and productively.

"There is growing concern about the scarcity of water, and the need to save it, but in many countries, it's still taken for granted as something that pours out of the tap," said Jane Withers, who co-curated the exhibition with Ilse Crawford. "People think of water as a clear, neutral product that always looks the same. It doesn't, because it's a living thing, as the samples show. We hope that once people realize this, they'll consider using water more pleasurably as well as more thoughtfully."

The underlying theme of the exhibition is that the current efforts to stave off the water crisis will have greater impact if we also grow to appreciate its special qualities, such as its playfulness and sensuality.

The blunt facts of the water crisis are depicted in a graphic installation created by Hjalte Karlsson and Jan Wilker of the New York graphic design studio karlssonwilker. Some 70 percent of the earth's surface consists of water, but only 3 percent of it is freshwater, and less than a third of that (the 1 percent in the exhibition's title) is drinkable. The amount of water we consume is increasing, whereas the supply of freshwater is static, which is why it's running out. More than a third of the world doesn't have enough water, and the situation is worsening.

Another crisis is looming in water disposal. A third of the world's population already has inadequate sanitation. Many cities in developing countries are expanding so fast that they are literally outgrowing their sanitation networks. In developed countries, most of the networks

are now decrepit. Hence the chaos on London's roads while its 19th-century drains are replaced.

Patching up and enlarging existing sanitation systems isn't the solution, as we may not have enough water to supply them, given that we waste so much of it. Some 70 percent of the drinking quality water flowing into North American or European homes is flushed down the toilet or used for cleaning. Our water footprints — which include the water used to manufacture the things we consume, as well as the water we use ourselves — are increasing. The further a product, and everything used to make it, has to travel, the bigger its water footprint will be. A typical Belgian consumes 108 liters, or nearly 30 gallons, of water directly each day, and another 4,940 liters indirectly, including part of the 10 that are used to produce a sheet of A4 paper, 11,000 for a pair of jeans and 40,000 for a car.

What can we do about it? The exhibition, which is to tour in other cities after Hasselt, including a stint at Somerset House in London in 2010, suggests lots of possibilities. Some are political initiatives, such as the water-saving program adopted by the Spanish city of Zaragoza, which succeeded in reducing its citizens' water consumption to a third of the national average. Others are ideas developed by designers and artists to suggest how we can redefine our relationship to water, as well as to propose practical solutions to the crisis.

Some of them are being tested at Z33. Hanging outside the building is Rain Catcher, a giant raindrop-shaped device developed by the Spanish designer Jordi Canudas to add rainwater to the drainage system. Taking pride of place in the garden is Pig Toilet, an experimental dry sanitation project devised by the Dutch artists Atelier Van Lieshout. It combines a pigpen with a human toilet, the contents of which are eaten by the pigs, rather than being flushed away and wasting water. "It sounds disgusting, but it works," said Crawford. "In the 19th century there was a vigorous debate between the advantages of dry and wet sanitation systems. The urgent factor is the reason why wet systems won, but dry sanitation was a perfectly workable solution."

More conventional (and less stomach-churning) proposals include the LifeStraw, a \$5 portable device invented by the Swiss company Vestergaard Frandsen to purify water as it is sucked up through a straw. Another is the Aquaduct, a concept tricycle developed by the



Jordi Canudas

Above, a Rain Catcher by Jordi Canudas; left, LifeStraw, by Vestergaard Frandsen, purifies water as it's sucked through a straw; below, the Aquaduct tricycle by IDEO carries water and purifies it as the pedals turn; bottom, water saving devices at the show.



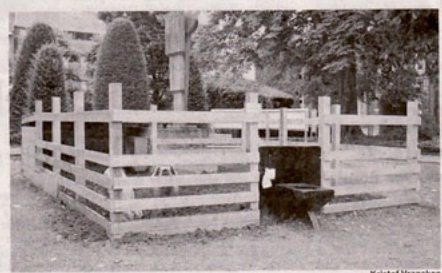
Nicolas Zurcher



Kristof Vrancken



Kristof Vrancken



Kristof Vrancken

Above, water samples displayed at "1% Water and Our Future," at the Z33 gallery in Hasselt, Belgium. Left, Pig Toilet, a dry system for waste disposal by Atelier van Lieshout.

The amount of water we consume is increasing. The supply of freshwater is static, which is why it's running out.

American design group IDEO, which carries water, and purifies it using a mechanism started by turning the pedals.

Other projects not only help to save water, but encourage us to use it more imaginatively. Some countries, such as Japan, Finland and India, have never lost their appreciation of water, notably by cherishing communal bathing as an important social ritual. But industrialized countries tend to treat it as a commodity, with quantity trumping quality even in water's most "luxurious" guises, such as enormous "luxury" baths and power showers.

A collection of antique water vessels from different countries shows how water has been used sparingly, but very effectively by cultures that value it. Crawford

and Withers believe that the designers of today's water-saving systems can learn from them, as the Dutch designer Irene van Peer did when developing the Mahlangu hand-washing device. "Hand washing is still the first defense against disease in the developing world," said Crawford. "People in communities without running water can make the Mahlangu themselves by customizing a plastic water bottle. They can have 50 or 60 hand washes from one liter of water. One woman commented on how pleasant it felt to feel water splashing on her hands — something she'd never experienced before."

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A slide show of designs from the exhibition and more columns by Alice Rawsthorn.