

Technology that Matters

Most travelers in the developing world see people living in poverty. John Barrie sees potential clients. An architect by training, Barrie has devoted the last several years to designing products for the poor—the billions at the bottom of the economic pyramid. “Nobody’s really looking at their needs and coming up with new technologies to make their lives better, or relatively few people,” he says. In recent years the relatively few designers who focus on the poor have developed low-budget solutions to problems as wide-ranging as poor lighting and infant morbidity. Here are a few technologies that have us talking:

SUSTAINABLE ENERGY

An estimated 1.6 billion people, or nearly a quarter of the world’s population, lack access to electricity. To see after sundown, many burn the fossil fuel kerosene, which is costly, noxious, and polluting. Accidental blazes aren’t uncommon. Barrie and other designers are looking to the sun for alternatives. His Michigan-based nonprofit, the **Appropriate Technology Collaborative** (app-techdesign.org), has installed solar panels that power light-emitting diodes (LEDs) on roofs in rural Guatemala. Meanwhile, **D.light** (dlightdesign.com),

an international company with a stated mission of “replacing every kerosene lantern with clean, safe, and bright light,” has pioneered portable solar-charged lights. Farmers can take D.light lamps into their fields; shopkeepers can do business after dark. One of the most profound—and unanticipated—upshots of replacing dim kerosene lamps with bright lights is that children can study longer. Barrie tells of a family in Guatemala that’s sending a child to college for the first time. “That’s getting out of poverty in one generation with just the introduction of an electric light.”



Affordable solar lanterns replace unsafe kerosene lanterns in India.

INFANT HEALTH

Four million babies die within a month of birth—many for lack of access to neonatal incubators, which cost tens of thousands of dollars. Donated incubators often go unused in the developing world because clinicians aren’t trained to use them, and replacement parts are costly or unavailable. Enter **Design that Matters** (designthatmatters.org), a Massachusetts-based nonprofit developing an incubator made from car parts, available in even the poorest countries. A dashboard fan circulates heat; a cigarette lighter provides backup power.



The NeoNurture incubator utilizes car parts to save infant lives.

CLEAN WATER

Project Air, a nonprofit organization that brings Ashtanga Yoga to sexual violence survivors in Rwanda, has faced many challenges, not the least of which is providing safe drinking water to its impoverished students. “I don’t know a single site we work in that has anything like drinkable water available,” says founder Deirdre Summerbell. “And you know if you do Ashtanga, it’s inevitable that you will get thirsty.” Project Air plans to train locals in a method known as solar water disinfection, or SODIS (sodis.ch), which involves filling trans-

parent bottles with water and exposing them to sunlight for several hours. The sun’s UV radiation kills diarrhea-causing pathogens. “It’s like a piece of poetry: using the sun to clean and disinfect water,” Summerbell says. (Read more about Project Air at YogaInternational.com/rwanda.)

Water filtration technologies are also finding their way to developing countries. **Sawyer Products** (sawyer.com), a Florida-based company whose water



A young Haitian boy enjoys a glass of clean filtered water.

filters are popular with backpackers, “started to think bigger picture” a couple of years ago, says spokeswoman Amy Reed. The result: Point-ONE Filter, which costs about \$50 and can provide a small village with clean water for as long as it’s properly maintained. The technology is now in use in more than 80 countries.

—Anna Dubrovsky >>

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