

DESIGN FOR GOOD

Innovative product designers are cutting waste and saving lives – in elegant ways. Andrew Diprose highlights ten smart ideas

There is an exciting new trend for designing products that are both beautiful and socially useful. These pages showcase some of our favourite examples, from the boots that protect against landmines to the cap that transforms a drinks can into a needle bin.

The designs are simple, elegantly functional and pack the “wow” factor – you will be amazed that many of them didn’t exist before. And with businesses clamouring to appear sustainable, it is refreshing to see innovations like these that are not marketing tricks, but genuinely designed to improve the welfare of others.

A new book, *Design Revolution* by Emily Pilloton (Thames & Hudson), collates many such creations. Pilloton runs Project H Design, a not-for-profit organisation that encourages humanitarian product design and operates in six countries. Her aim is to reorient design towards social and environmental issues, and she believes that designers have valuable skills to offer. Her group has backed more than 20 projects.

“They can take big, complex ideas and make sense of them in a tangible form,” she says. “They take the problems and opinions of all kinds of different people and distil them into something that works for everyone in a beautiful way. To the public, design still seems like something you have to be able to afford. Very few people view it, as I do, as problem-solving with added grace and foresight.”

Andrew Diprose is art director of WIRED

1



1 SKYSAILS

SkySails can transform a transatlantic cargo ship into an environmentally friendly form of transport – because its sails generate five times more propulsion power by area than conventional sails can manage. “Ships at least 25 metres long, with an average cruising speed of up to 16 knots, are particularly well suited,” says a spokesman for the Hamburg-based firm. “The efficiency of SkySails declines as the vessel’s speed increases.”

WATER CYCLE
The drive-train can be switched so, instead of turning the wheel, the pedals work the pump



3 AQUADUCT BIKE

Aquaduct is a simultaneous water-transportation and filtration vehicle, created for the developing world by five engineers based at Ideo in Palo Alto, CA. The bicycle has a 20-gallon storage tank at the back, from which a pedal-powered pump draws water via a filter into a front-wheel-mounted container. Brian Mason, a mechanical engineer on the project, says: “When we roll this out it won’t necessarily be a big blue bike. It could be a trailer that attaches to existing bikes, or people could replace parts in their bikes.”



2 YELLOWONE NEEDLE CAP

The Yellowone Needle Cap provides a safe receptacle for hypodermic needles. It fits over a drinks can – readily available worldwide and which can hold up to 400 needles. The shape of the cap’s aperture separates the needle from the syringe, keeping it safely away from fingers. Designer Hân Pham, who lives in Denmark, worked with Médecins Sans Frontières to develop a solution to sharps waste. “I discovered that half of needle injuries among medical staff happen in the transportation and disposal of them. I wanted to solve that problem,” Pham explains.



4 SPIDER BOOT

“You can’t fight an explosion,” says Gad Shaanan, the San Diego-based designer of the Spider Boot, “but you can work with it.” Shaanan discovered that injuries caused by anti-personnel mines are more often caused by shockwaves than by shrapnel; he created the Spider Boot to protect mine clearers from those waves. The wearer is elevated on a platform strapped to their boots, distancing them from the blast; during an explosion, the prongs break away from the base, further reducing the impact on the wearer’s legs.



EIGHT LEGS GOOD
The snap-off mechanism is like those used on skis

5 HIPPO ROLLER

In 1991 two South African engineers, Pettie Petzer and Johan Jonker, sought to help women in the developing world carry water. Now, after Project H’s involvement, 30,000 Hippo Rollers have been distributed – mainly in South Africa, Angola, Mozambique and Somalia. Each 24-gallon barrel provides two days’ water for a family of seven. Speaking from Johannesburg, Grant Gibbs, the owner of the project, says: “Often when we go back to a community we’ve helped they’re cheering. And they sing about how the Hippo Roller helps them.”



6 MECHANICAL ADVANTAGE TOURNIQUET

Designed to be more effective in treating outward bleeding, Canadian firm Pyng Medical's Mechanical Advantage Tourniquet (MAT) is a compression device which saves lives and limbs. MAT can be operated with one hand and can stop life-threatening blood-flow within just ten seconds. "I received a nice email from a commander in Afghanistan who wanted to compliment me on the product and tell me it had saved lives," says Royce Rumsey, its American developer. "Even when a soldier is dazed, the MAT is simple to operate."



7 ADAPTIVE EYECARE

There are over a billion people in the world who need vision correction but don't have an optician. Joshua Silver at Oxford University's Centre for Vision in the Developing World has created these fluid-filled lenses. A simple device controls the amount of fluid between two flexible membranes: the more fluid, the greater the curvature of the lenses, and the stronger the prescription. "The question was: if you equip someone with a device, could they adjust it themselves and make their own eyewear?" Silver asks. "It turns out the answer is yes."



8 MINE-DETECTING PLANT

Danish bio-tech company Aresa's BioSensor plant could offer an new way to detect old land mines. Its GM seeds are scattered over suspect ground and left to germinate. When explosives have been in the earth for a long time they release nitrogen dioxide into the soil. The BioSensor plants sense this and turn red. The firm has since gone into liquidation - but its idea lives on.



9 SINK POSITIVE

This water-saving sink fits over a standard toilet cistern. It pipes out water after you flush. The dirty sink water then refills the toilet tank. "It uses the same water supply that feeds your kitchen sink," says Carl Brown, its Tennessee-based inventor. One-third of the average UK family's water is flushed down the toilet; this device would minimise waste. And, because the pipe flows only when you flush, it helps detect leaks, which can waste 750 litres a day.



10 WEZA

This portable energy generator delivers a source of consistent power ideal for use in the developing world and in emergency situations. Known as the "Weza" - from the Swahili for "power" - it can generate enough energy to jump-start cars, charge electronic devices such as mobile phones and GPS systems, and provide electric light. The Weza works by converting human steps into energy (the user can step repeatedly on the in-built "treadle"), and can also be charged via wind and solar power, and can create both AC and DC power without batteries or a grid.

