

FUN AND FEASIBLE ECOLOGY



Sustainability and environmental awareness are hotter than ever. KAREN D.R. DE CORRALES takes a closer look at some alternative waste handling methods.

The worldwide pursuit of environmental awareness has become a kaleidoscope of efforts that takes many shapes, identified with terms like ecology, sustainability, recycling and Cradle to Cradle. The recent Energy Fair held in The Hague on October 5 - organized by Sustainable The Hague (Duurzaam Den Haag) by order of the Municipality of The Hague - was a perfect showcase for a variety of such environmental efforts. It presented products and processes in the areas of biological materials and foods, conducting a sustainable lifestyle, sustainable energy applications, and of course creative systems as recycling.

While most of us are now familiar with practices like the collection of organic material, paper, plastic and glass for reuse, there is also much being done that many people are unaware of. Experts in this field know that biodegradable does not necessarily mean biocompatible; stuff should not only break down, but fare well in the environment it is put into. This differs with factors such as region, climate and temperature.

Waste as art

Not new, of course. But not to be left out in an article putting waste in the spotlight. While the world counts many 'Waste as Art' strivings, including the annual exhibition literally bearing this title in Australia, this article focuses on some artists that have taken the concept to another level. German Ha Schult's well-publicized army of Trash People has been roaming the globe since 1996, from Cologne to Washington D.C. to the Great Wall of China; human-sized depictions in crushed soda cans, computer parts, and more. Chinese Wang Zhiyuan created tornados of all sorts of plastic containers towering over 10 meters high - silent criticism of the

plastic litter in his hometown Beijing.

Special credit must go to New York-based artist Vik Muniz, originally from Sao Paolo. He succeeded in transforming the lives of a group of people, as he puts it "using the same material that they deal with every day." The award-winning documentary *Waste Land* follows him in his triumphant collaboration with the 'catadores', pickers of recyclables, on the world's biggest waste site outside Rio de Janeiro: Jardim Gamacho. Large collections of the garbage that surrounds these people were assembled into images of some of them on a large warehouse floor, captured on photo from above, exhibited and sold at auction. Proceeds in the amount of some \$250,000 and prize money from various awards were returned to the catadores.

Waste as food and flora

The day may come in which you may plant the paper you are holding to later on harvest carrots from it. While we may not be there yet, several companies have ventured beyond the biodegradable into the regrowable. According to Eden's Paper, the technology to create plantable seed paper has been around since the 1960s. Having signaled the tremendous waste in 2012 in the UK alone (enough to wrap around the world nine times), this UK-based company decided to specialize in seeded wrapping paper. In the embossing process applied in the creation of this plant-after-you-unwrap paper, even the ink is vegetable-based and no glue is used - the seeds are sandwiched between seven layers of tissue paper that begins to break down when it hits the soil. All you need to do is figure out the preference for flowers, herbs, or vegetables. Fruit options are currently still being developed.

Eden's Paper is not alone in connecting consumers' growing green

awareness with the possibility of reapplying paper in this greenest of ways. Niko Niko (the Netherlands) is just one of the companies selling seed cards and confetti. Botanical PaperWorks (Canada) offers almost any paper product you can think of, including bookmarks, paper sheets, coasters, tags and even business cards. Since the big wholesalers have gotten the scent, you can also purchase seed paper at Walmart in the US and on Amazon. Google 'seed paper', and out pop a variety of providers and even tutorials to make your own!

Still unique seems to be the initiative of OAT Shoes. Dutch founder-owner Christiaan Maats came up with the concept in 2008, following his Industrial Design studies in Delft and a research project in Sydney, Australia. The 100% biodegradable 'Shoes that Bloom' contain natural materials (hemp, bio-cotton and cork) and certain biodegradable plastics that decompose in a matter of months, courtesy of the microbes in the soil you put them in. The seed sheet in the shoes' tongues should sprout wildflowers within days! OAT's mission is about the integration of nature and industry, symbolized in the OAT logo: unite (O), create (Δ) and inspire (+). Maats: "With OAT, I wanted to reunite people with the cycles of nature: in everything that ends lie the seeds of new beginnings. Whether those are flowers, a new product or even a new idea." A few collections on, also having launched OATies - baby shoes that grow a tree of life - OAT has begun putting out luxury shopping bags that turn into sunflowers and intends to continue development of products and concepts.

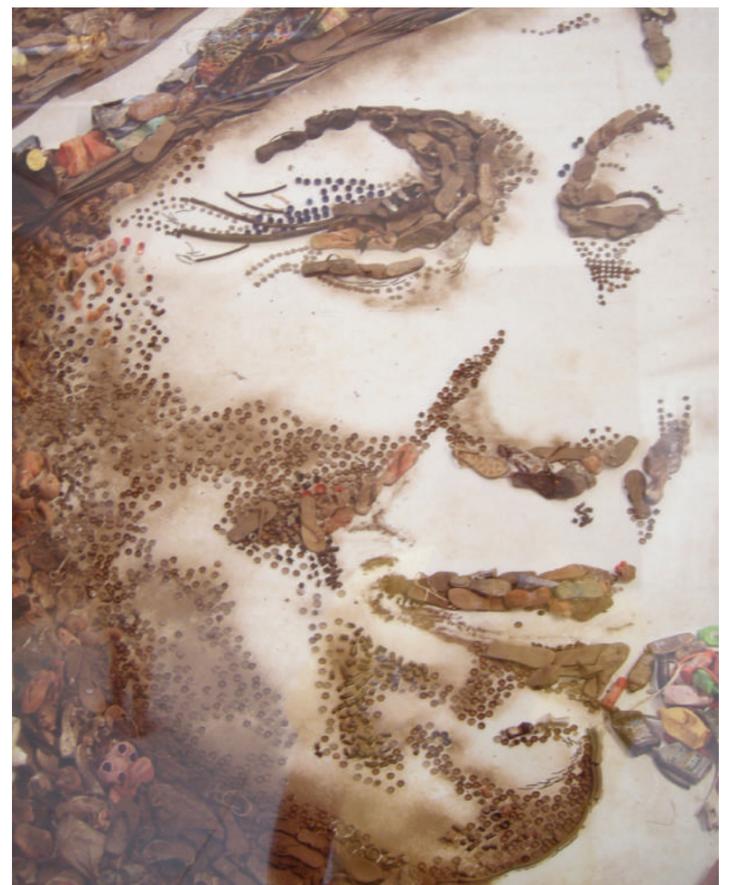
Waste as building blocks

Imagine turning rubble into construction materials on location and minimizing the need for waste removal. Another Dutch solution to one of the

greatest ecological polluters; the construction industry. The Mobile Factory (De Mobiele Fabriek) transforms debris into Q-bricks that look like and stack up like Lego blocks, ensuring quicker, cheaper, stronger and more environmentally friendly construction than when using new, raw materials. Founder-director Gerard Steijn devised the copyright-protected system inspired by his travels to disaster areas in Eastern Europe. The Mobile Factory - transportable in two cargo containers by land, sea or air - pro-

vides an efficient way out whether buildings have been left in ruin by calamity or by design: it can be set up in a very short period of time and operated by unskilled local workers, churning out the Dutch quality-requirements-meeting Q-bricks. Daily production: 10-50 earthquake-proof accommodations per day!

Another sustainable building block is the wooden pallet. Among several pallet constructions found online, the Pallet House is an award-winning product of I-Beam Design,



an architecture and design firm based in New York. It presents a long-term shelter solution for people finding themselves in destitute situations. Designed in 1999 to help relieve the post-Kosovo war refugee situation, the project was also inspired by the notion that a year's supply worth of recycled American pallets could suffice to house millions of refugees. A construction plan can be purchased on the I-Beam Design website for \$75.00. The result: easy assembly of 100 pallets by 4-5 pairs of hands in less than a week, using only hand tools! Best of all: the emergency structure can be transformed into a more permanent residence using more stable local materials such as earth, mud, stone, plaster, and concrete.

Plastic solutions

Many people will be familiar with the images of birds' corpses riddled with ingested plastic, and the view of oceans and beaches covered in plastic litter. This certainly was not lost on young, Dutch teenager Boyan Slat. Supported by a team that grew to approximately 100, Slat - 17 at the time, and still in high school - embarked on a feasibility study in 2012, spoke at a TEDxDelft event that same year and made the news earlier this year, when he presented the plan to rid the oceans of plastic in New York and concluded that it was doable. While The Ocean Cleanup is not strictly a recycling alternative, Slat and his team should of course be commended for seeking to close the gap between sustainable waste removal and disposal. Now in its pilot phase, having raised over 2 million dollars through crowd-funding, The Ocean Cleanup's progress may be followed on its website.

Launched in February of this year: the Vortex Project, another initiative relating to cleaning up our waters. Overseen by pop superstar Pharrell Williams and co-partnered by Sea Shepherd Conservation Society USA, Bionic Yarn, and Parley for the Oceans, the project seeks to actively recycle ocean plastics into wearable, durable denim. Since "everyone has a pair of jeans in their closet", the new denim is currently being marketed as RAW for the Oceans, by G-Star. The RAW for the Oceans and Bionic Yarn websites feature process-describing diagrams, of course emphasizing the same problem as signaled by young Slat; the absurd scale of the pollution of our oceans, its effect on sea life and all related repercussions, such as potentially finding its way into our food.

Metal solutions

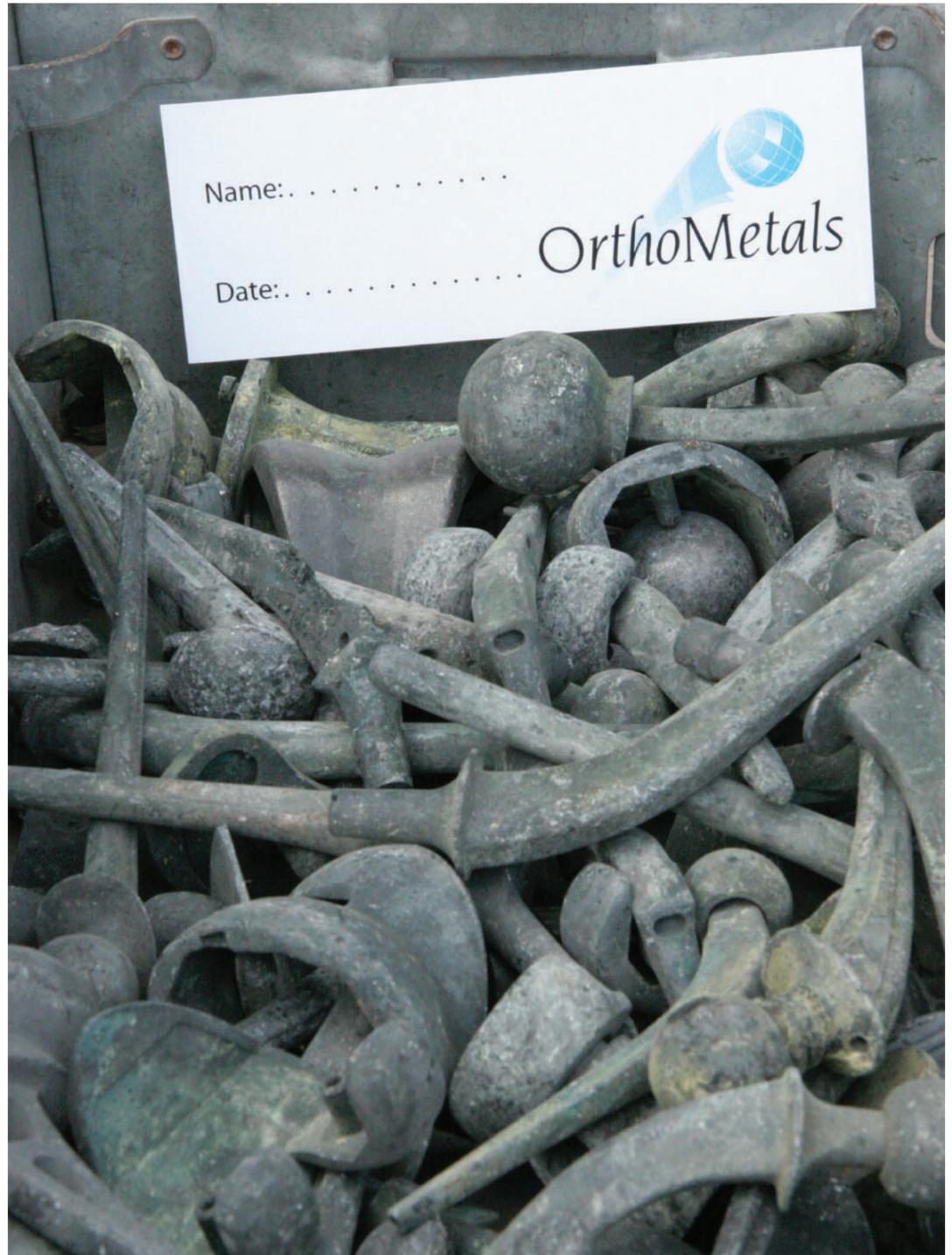
OrthoMetals was born from a conversation between logistics manager

/ recycling (metal) expert Ruud Verberne and orthopedic surgeon Jan Gabriëls, about the desirability of recycling implanted metal remains. With now over 15 years of experience, OrthoMetals is the global leader in orthopedic implant recycling, in charge of the collection and recycling of metals discarded as waste in the past, for more than 450 crematoria worldwide. When co-founder Gabriëls passed away in 2012, his sons took over, equipped with fresh MBA degrees. Since Verberne's son and daughter also followed in their father's footsteps, OrthoMetals is a true family business.

Based in Meppel, the Dutch metal recycler overcame several challenges to be able to branch out across the globe. These included religious considerations, particularly in France, Portugal and Italy, where burial is more customary than cremation. In the UK, where the British crematoria system is divided into a great number of districts, logistics took some time to sort out. Key in the process for the collaborating partners is the respect that OrthoMetals guarantees remains are handled with. This is apparent even from the fact that the destination of the recycled metal is not explicitly revealed on the website. OrthoMetals works only with trusted end users who do not resell the metal provided. With net proceeds going to charity and crematoria being allowed to choose their charity themselves, OrthoMetals represents another laudable Dutch movement in which recycling has come full circle.

Musical solutions

To end on a harmonic note: in at least one corner of the world, music is made from trash. In Catuera, Paraguay, magic was born of need in a slum built very nearly on another large Latin American garbage dump. In the movie teaser for the Landfill Harmonic documentary, scheduled to come out this year, teenagers of the Recycled Orchestra (los Reciclados de Catuera) willingly explain and demonstrate the use of their instruments, made of discarded oil cans, wood, old kitchen utensils, bottle caps, coins, and whatever else can be found. The sound produced by the 'cello' handled by Juan Manuel Chavez - otherwise known as Bebi, 19 - is surprisingly nearer the real thing than expected, as is the sound of the recycled violins, flutes, and other string, woodwind, brass, and percussion instruments. In a place where an original musical instrument is worth more than the occupants' dwellings, there was really not much choice when more children wanted to be involved in Director Fa-



vio Chávez' initiative to keep them from playing on the landfill - and there were not sufficient instruments to accommodate them. Enter Nicolás Gómez, also known as Cola, the inventive garbage picker who began experimenting with the creation of instruments from garbage.

The movie project was initiated in 2009 by Alejandra Amarilla (Founder & Executive Producer) and filmmaker

Juliana Penaranda-Loftus. It involves an international crew and is sponsored among others by the Creative Vision Foundation. The movie, the orchestra, and related educational and other efforts can still be supported in several ways. For more information, see their website: Landfillharmonicmovie.com. The instruments produced from the project bring joy to manufacturers, parents, and young

musicians alike. Ada Maribel Rios Bordados, 13, said: "When I listen to the sound of a violin, I feel butterflies in my stomach." A somewhat ambiguous experience, hearing Mozart's Eine Kleine Nachtmusik performed with recycled instruments. Although another triumph of the human spirit may be celebrated, the existence of an orchestra based on trash should be more food for thought.

