



DESIGN

SPRING 2019

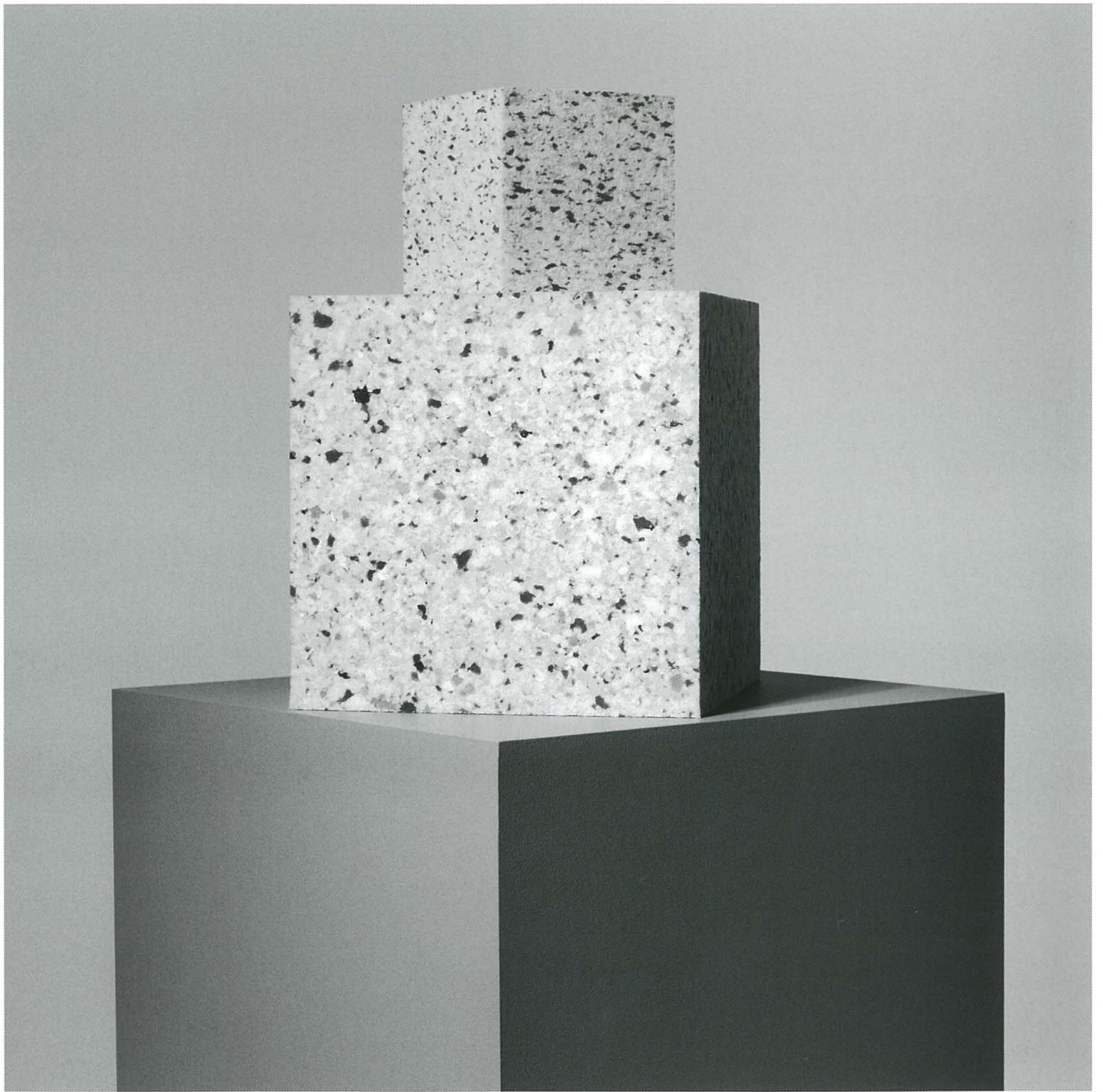
How eco design will save us all

◆
Designer Raf Simons on fabrics,
fashion, art and flowers

◆
Underground parks, postmodern cakes
and seaweed houses

◆
Plus Tadao Ando, Tom Dixon,
Rowan Moore

The Observer



WASTE NOT. WANT

From dyeing clothes with bacteria to a roof made from recycled flip-flops and laptop keyboards transformed into desk legs: these are the ideas and products paving the way for a more sustainable future. And these are the designers behind them

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Using bacteria to transform dyeing

Natsai Audrey Chieza

For a designer, Natsai Audrey Chieza spends a lot of time poring over a petri dish. But biodesign – using biological systems to create a design with a better ecological performance – involves understanding on a molecular level as well as the grand scheme. Chieza’s focus is changing the dye process used in the textile industry with the help of bacteria. At the biodesign studio she founded, Faber Futures, they’re studying *streptomyces coelicolor*. This bacterium, typically found in soil, produces pigment and can grow directly on to fabric. This means it could potentially be used to make a colourfast dye that, unlike current methods, uses very little water and no chemicals. “We’re allowing nature to show us what a new system might look like,” Chieza says.

Born in Zimbabwe, she moved to Scotland at 17 to study architecture at the University of Edinburgh. After that she enrolled on the MA in material futures at Central Saint Martins, analysing materials and production processes, and trying to improve current systems. A meeting with John Ward, professor of synthetic biology for bioprocessing at UCL, introduced her to the field of synthetic biology (a mix of engineering and biology). After eight years of research, Chieza launched Faber Futures.

Day to day, her work at the forefront of biofabrication ranges from studying microscopic organisms to imagining “plausible, preferable” models for inhabiting the planet. “It’s a challenge,” she admits. “I’m fortunate to work with a strong community of pioneering women, but it’s a lot of hard work. Sometimes it’s a relief to just look at a petri dish, wondering why it didn’t work this time.” NC ➡

Turning dust and wood shavings into worksurfaces

Conor Taylor

Sometimes, inspiration comes from the place you'd least expect it; Conor Taylor's was under his feet. After college, he found a job with a south London carpenter in a workshop whose floor was littered with planing dust and wood shavings. "I just started thinking, 'There must be a use for this,'" Taylor remembers.

He wondered whether there was a way of creating a timber version of terrazzo – a flooring that itself comes from reusing marble fragments. "Really, what I wanted to do is use the waste of this already wasteful industry," he explains, "and turn it into something made with really high-quality workmanship."

The rest was a matter of trial and error, experimenting with various combinations of resin and timber until he hit on a formula that was sturdy enough for commercial production – chunks of sycamore, oak, walnut and plane, dunked into a rainbow of resin backgrounds. He still winces as he recalls his first commission, a countertop that took a painful 50 hours to hand-produce. But from there, Taylor's path led to Makerversity's co-working space in Somerset House in London, then onwards to a partnership with luxury surfaces producer Solomon & Wu, who were able to scale his concept and turn it into a thriving business.

Taylor's company, Foresso, has installed timber terrazzo all over the world in the past few years, from cycling brand Rapha's Washington clubhouse to Christian Louboutin's Shanghai boutique to Miller Harris's latest outpost in King's Cross – a project that,



Taylor notes with satisfaction, used a London plane tree sourced from just up the road in Euston.

The collaboration has prompted Solomon & Wu to make a radical shift: since the end of last year, they've devoted their entire business to producing sustainable materials. Taylor, for his part, is continuing to refine the process – right down to turning his own offcuts into a product line themselves, sold off as everything from cladding panels to coasters on Foresso's online store. *JO*





Playing around with product design

Christophe Machet

Behind Christophe Machet's playful aesthetic lies a serious desire to change how the world views waste. Take the Instagram-friendly reflective-striped sheep he installed to slow traffic in downtown Christchurch, New Zealand. Their chunky forms are moulded from recycled polyethylene and produced by a local manufacturer. Or the Pipeline chairs that launched to acclaim at last year's Milan furniture fair – formed from sewage pipes (a resource that's cheap, durable and readily available in most parts of the world), sliced on a giant CNC machine Machet created himself and bolted to chunky wooden bases.

The chairs are just the latest in a series of increasingly high-profile projects to emerge from the Swiss-born designer's Paris workshop. Along the way, there's also been the Camioncyclette (a bicycle with a shopping basket super-scaled to take over the entire frame) and Toiture (a rainbow-coloured roof covering devised with local designers in Burkina Faso's capital, Ouagadougou, and assembled from flip-flops sourced from the city's landfill sites). But the concept that perhaps best sums up Machet's Willy Wonka-ish, trash-to-treasure approach is the Polyfloss Factory, a machine he created with three contemporaries at the Royal College of Art. Inspired by the fact that plastics are recycled less regularly than metals or wood, the Factory looks more like a fairground attraction than an industrial alchemist's tool – but instead of spewing out candyfloss, it spins polypropylene chips into a fibre the team have applied to everything from packaging to textiles to table lamps, in a swathe of eye-searing colours. *JO* ➔

Creating new clothes from recycled fabrics

Priya Ahluwalia

On the MA menswear course at the University of Westminster, Priya Ahluwalia (below) was set some homework that changed her life. Asked to imagine a future world drained of resources and how she would work in it, she found the answers lay close to home. Visiting Lagos, Nigeria, her father's home town, in 2017, she saw vast quantities of recycled clothes offloaded on to the local markets and found they'd been donated to charity and sold on for profit. Then in India, seeing her grandmother, Ahluwalia travelled to Panipat, global recycling capital for secondhand clothes, where she photographed mountains of abandoned items – images now in an art book called *Sweet Lassi*. She says the experience changed the way she'll work for ever. "I've learned so much about the supply chain and how things can be improved. I can't ignore that."

The experience also inspired her 2018 graduate collection – colourful, patchwork menswear made from vintage material and inspired by her travels. "Being mixed heritage and growing up in London has had an impact on my worldview. My heritage is something that will always find its way into my work. I often look at old family photos as I design; my new collection features notes written by my great-grandad when he was practising English."



Now she has founded Ahluwalia Studio to create capsule collections of clothes made using recycled and vintage fabric. She sees this as just the start. "I've only touched the surface of recycling. I want to find out about technology that helps me produce in a positive way while cherishing artisanal methods."

She is also looking into recycled plastics and deadstock clothing. "I like the challenges that crop up in design," she says, "and trying to create things in a less wasteful way is an enjoyable part of that." **AF**

Tapping the potential in fallen leaves

Tjeerd Veenhoven

opportunity in the billions of leaves that fall every year, which go largely unused. By figuring out a process that makes the leaf soft and pliable, he's developed Palmleather – a vegan alternative to animal leather which has been used for everything from chair covers to sandals (for US activewear giant O'Neill) to boldly graphic rugs. The original factory in India is now fully self-sufficient, with two additional sites under way in Sri Lanka and the Dominican Republic.

Back at base in Groningen, the Netherlands, Veenhoven's studio has multiple initiatives on the go, many focused on realising the untapped potential of materials closer to home, such as laminate panels concocted from potato peelings, pigments made of ground-up tulip heads and fabric grown from underwater algae. "For me," he says, "design is the tool to initiate, activate and seduce the transition to sustainability. Over the last 10 years, I've seen it going from a few crazy fools to business students doing their MBAs on sustainable business models." *JO*

"Most of my time is spent learning about the complex processes that make our products," Tjeerd Veenhoven admits. "I use design to bring awareness, transparency and responsibility – from sourcing raw materials to smart manufacturing to the afterlife process of a product."

This due diligence is at the heart of Veenhoven's success. His early work ranged from wind-powered phone chargers to bicycles made by wrapping resin-dipped carbon round reused parts. But increasingly, he's focused on material exploration – at the moment he's working with the areca palm, a plant common through Asia and grown mainly for its nuts. Veenhoven spotted an



Making art from bees and silkworms

Marlène Huissoud

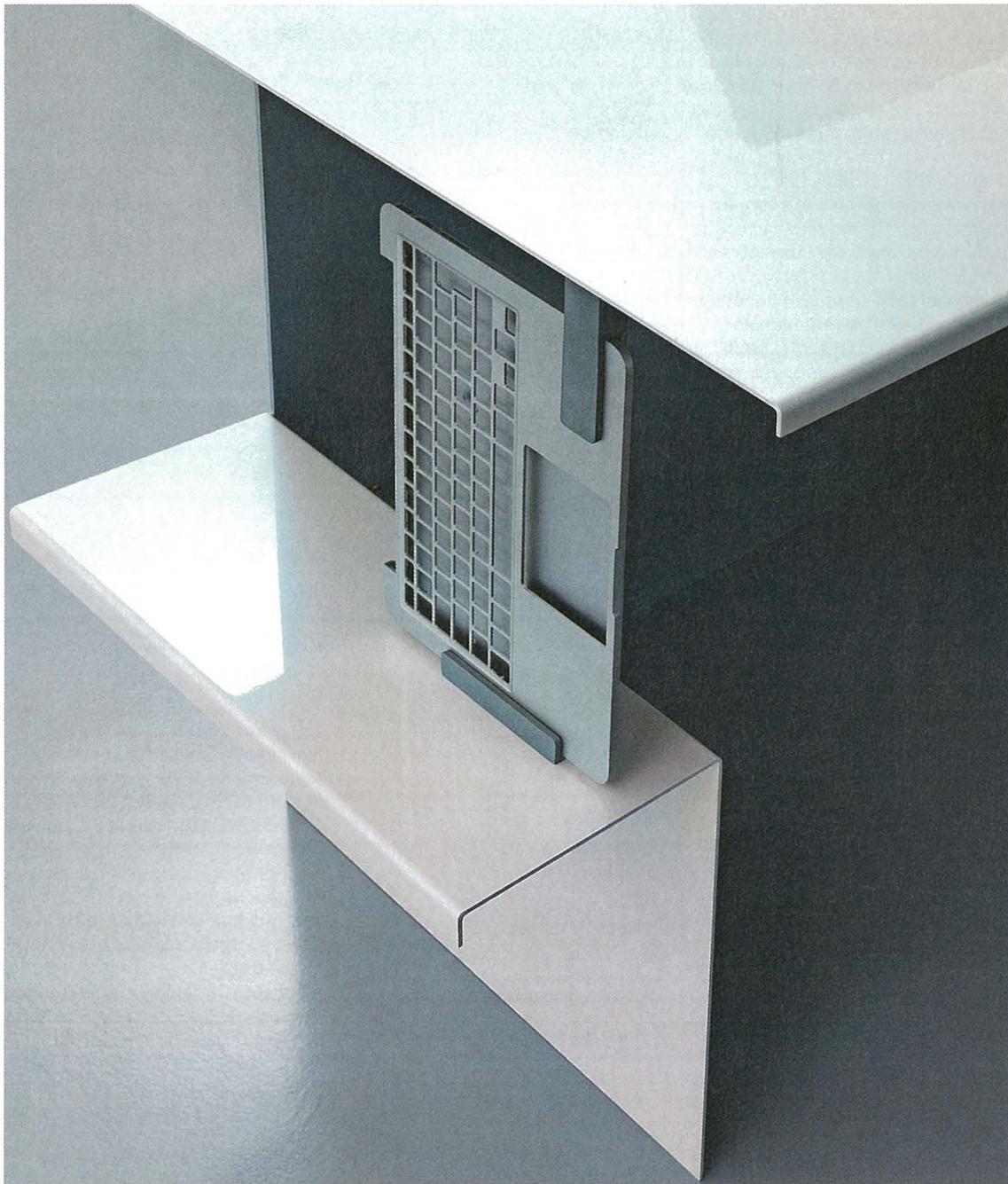
For her birthday last year, Marlène Huissoud was given two beehives. They are kept outside Paris, where her studio is based, and tended by the son of the man who taught her father to keep bees. "My father left school at 18 and trained as a beekeeper," Huissoud says. "We spent our summer holidays travelling through France with the hives, producing different honeys." It was this that made Huissoud want to explore the possibilities of insect waste as a material.

She graduated from Central Saint Martins in 2014 with an MA in material futures and a collection of textured, dark-gloss vessels made from propolis – a biodegradable resin honeybees produce by mixing

spit, wax and plant sap. Huissoud boils the propolis in water to separate it from the wax, then shapes and engraves it using traditional glass-blowing techniques. It appears amber when stretched, hardening to a dense black gloss when cool. "The beauty of it is you can rework it as much as you want. Unlike glass, if it breaks, you can fix it."

The finished objects are "organic, animalistic" – their surfaces emulate the dense texture of a hive. Huissoud says her designs are instinctive rather than planned and the studio produces around eight artefacts a year, each taking up to two months to create. The latest collection incorporates silkworm cocoons varnished in bio resin and fixed to an oak frame, creating strange, cellular cabinets that "underline the beauty of the insect world". Work is also under way for an immersive piece for September's London design festival. "Climate change, the disappearance of species – I want to have a bigger voice, to make a bigger statement around these notions that concern me." *NC* ➔





Turning 21st-century design on its head

Formafantasma

When Formafantasma's Andrea Trimarchi and Simone Farresin were asked to donate a gift to Achille Castiglioni's studio, to celebrate the centenary of the designer's birth, they went for something unexpected. "We chose a straw broom," Farresin explains cheerfully, "because it's an object that belongs to all cultures, and can be produced with locally sourced, biodegradable materials."

Castiglioni, a passionate advocate of learning from everyday objects, would have appreciated the gesture. But even he would have been taken aback by Formafantasma's ambition and curiosity about building materials. To date, the duo's projects have

resurrected Bois Durci (an archaic compound formed from wood dust and blood), combined Fendi leather offcuts with glass and cow bone, and mined lava from Mount Etna to melt into glass vessels. They've used dewaxed shellac, obsidian, cereal fibres, willow branch and wood powder – things that sound as though they belong in an alchemist's workshop, not a 21st-century design studio.

But they do hi-tech, too. Ore Streams, a commission from the National Gallery of Victoria in Melbourne, Australia, was a set of folded aluminium office furniture, melded with fragments of salvaged technology. Desk legs are made from laptop keyboards and stacks of iPhone cases; gold, painstakingly removed from circuit boards, coats the inside of a bin. It's all sleekly, spectacularly surreal – but triggered by a sobering statistic. "By 2080," Farresin explains, "the biggest metal reserves in the world will be above ground – circulated within building materials, appliances, furniture and consumer electronics."

Next year, Formafantasma will team up with London's Serpentine Galleries to work on a project looking at design and the environment. "After the second world war," Farresin says, "mass-produced industrial design was a way to improve people's lives and help reconstruction. Now, more and more, it is used as a mere styling tool. But considering the ecological disaster we are witnessing, it's impossible not to question its role." JO ¶