

Environment

+ Add to myFT

How to turn pollution into precious stones

Filthy smog is an opportunity for green-minded jeweller Daan Roosegaarde

“Special Report



Dust to gold: sustainability has become a major concern with a new generation of jewellers

YESTERDAY by **Milena Lazazzera**

Two years ago, Dutch artist and technologist Daan Roosegaarde installed his 7m-tall Smog Free Tower, a sort of gigantic air purifier, outside his studio in Rotterdam. Using patented ion technology, the Smog Free Tower drew the attention of the Chinese government, which decided it wanted one in Beijing’s 798 Arts Zone in September 2016. Official measurements show that the Clean Air Temple, as the Chinese call Roosegaarde’s tower, cleans 30,000 cubic metres of air an hour, making the air 55 per cent cleaner for a radius of 10m around the tower.

As bags of soot, made of carbon dust and non-carbon components, piled up, Mr Roosegaarde wondered about the material: “Van Gogh had charcoal, I have smog. What can I do with it?” He decided to transform the soot into a diamond, another form of carbon, by applying high pressure.

The Smog Free Diamond is cut into a sleek cube which contains within it another smaller cube formed by the non-carbon portion of each city's pollution. (The diamond is available in two colours, Beijing and Rotterdam.) The diamonds can be mounted on a ring, some of which couples have used for their engagements, or on cufflinks — such as those which were given to the Prince of Wales.

In turning waste into jewellery, Mr Roosegaarde has found himself in the vanguard of an eco-conscious trend among millennial consumers. A 2015 survey by Nielsen found that almost 75 per cent of millennials were willing to pay more for sustainable offerings, and AliResearch, the research arm of Chinese ecommerce giant Alibaba, showed that 66m, or 16 per cent, of its customers had bought five or more green products in 2015, up from 4m in 2011. They were also willing to pay higher prices for sustainable products.



Daan Roosegaarde's Smog Free Diamond

Millennial celebrities are sensitive to the issue and actor Emma Watson has emphasised her choice of environmentally sustainable garments and jewellery for red-carpet events.

“

A broader ecological awareness is pervading the luxury industry, alert to the costs

“Sustainability is not a trend for younger generations, it's a way of life,” says Jean Z Poh, founder of the online jewellery retailer Swoonery.com, which has a sustainable jewellery section.

“Cinderlite” is a synthetic stone similar to

shiny, deep onyx, created from inorganic waste treated with extremely hot plasma-torch technology, and it is at the heart of the minimalist jewellery designed by Montreal-based Cinderella Garbage. It has tones that can vary from deep green to grey, and is often set next to natural stones like agate, framed in silver or gold.

Singapore-based Elaine Tan, founder of Amado Gudek, eschews precious materials to focus on eco-friendly designs. She uses bioresin, which is a dense, plastic-like substance not derived from crude oil; instead, hers is obtained from waste products from the manufacture of wood pulp and biofuels. With this, she forges geometrical creations in colourful hues also using 3D-printed stainless steel, which is either embedded into the bioresin or used as a mount.

A broader ecological awareness is pervading the industry, which is alert to the environmental costs of luxury. Mining for precious metals and stones takes a toll when conducted irresponsibly — witness diverted rivers in Angola pandering to diamond mining or the current sapphire rush in Madagascar that is degrading the rainforest.



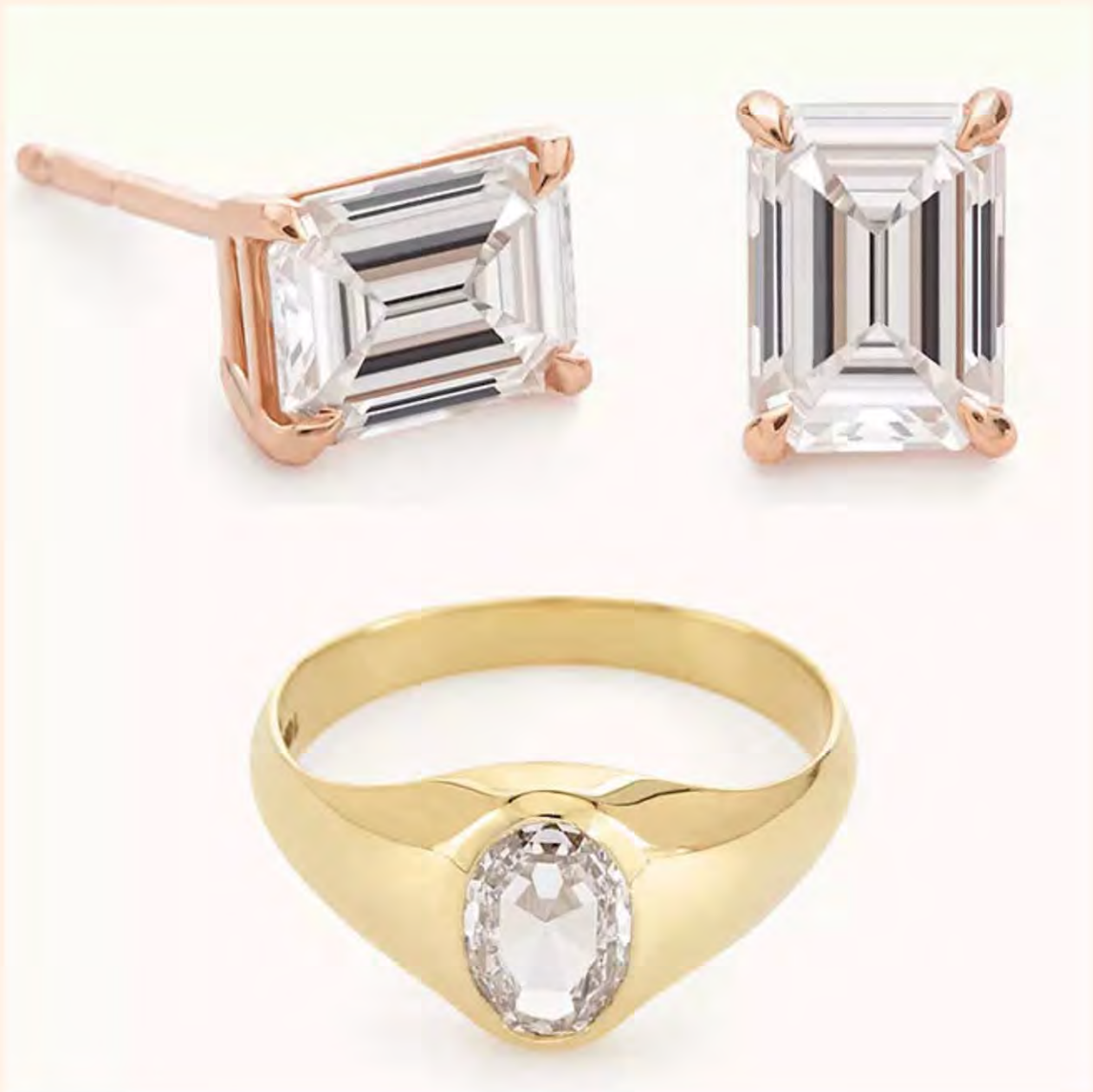
Diamond rings from Brilliant Earth

Brilliant Earth, one of the pioneers in ethically sourced fine jewellery, mainly employs laboratory-grown diamonds and recycled gold in its creations, while giving detailed disclosure of the origin of natural diamonds and coloured gemstones. Using an in-house process called atomic layer deposition to create its own diamonds, Diamond Foundry has broken into the retail market, selling loose stones through its website and jewellery through its own brand Vrai & Oro.



Brilliant Earth earrings

Like precious gems, fossils are ancient, rare and connected to the earth, “but you don’t have to mine them, hence they are more environmentally friendly”, says Monique Péan, who features fossils in her jewellery, alongside reclaimed diamonds and recycled gold.



Diamond Foundry jewellery

Confronted by environmental groups such as Earthworks, which has reported on the damage caused by cyanide in the extraction of gold, established jewellery houses have resorted to solutions including greater control of their supply chain and partnerships with not-for-profit organisations. In 2005, 14 mining groups and jewellery houses established the Responsible Jewellery Council, which set a code of ethical and environmental practices for its members — now numbering over a thousand.

However, Payal Sampat, mining programme director at Earthworks, has cast doubts on the reassurance that the RJC's certification can offer to consumers as far as communities' health or clean water is concerned. (The RJC rejects this criticism and robustly defends its standards.)

Challenging ideas of preciousness, Mr Roosegaarde's Smog Free Ring was recently acquired by the Stedelijk Museum in Amsterdam. "I do not have any intention of competing with jewellers," he says. "I use jewellery to raise awareness and funds for my Smog Free Towers." He adds that his diamond embodies *schoonheid*, a Dutch word that means both "beauty" and "purity" — a green message he hopes to spread.



Pieces from Amado Gudek



Pieces from Amado Gudek

[Copyright](#) The Financial Times Limited 2017. All rights reserved. You may share using our article tools. Please don't copy articles from FT.com and redistribute by email or post to the web.

