

# B E Y O N D

BY LEXUS

A JOURNAL ON DESIGN AND CRAFTSMANSHIP

THE REVEAL — P20



THE LAB — P90



IN SITU — P42



THE REVEAL

## GEAR SHIFT

Uncompromising in both design and engineering, the athletic Lexus LC 500 heralds a tantalizing new direction for the marque.

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IN SITU

## ALIVE AND COOKING

From its knockout cafés to its world-class culture, there are more than a few reasons to drive through Melbourne.

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THE ROAD

## THE SLOW GO

German wildlife cameraman Rolf Steinmann heads for the Bavarian hills in a Lexus CT on the hunt for a new kind of subject matter.

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## OUT IN THE COLD

In a snowy Canadian town, a team of Lexus engineers tests production vehicles in extreme conditions. We put on some gloves and report.

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ISSUE N°



## INTRODUCTION

In January, at the North American International Auto Show, we unveiled the all-new Lexus LC, a true-to-form, concept-to-production vehicle whose design was virtually unchanged from that of the LF-LC, which debuted in 2012. The moment represented a milestone in our long history of achievements, a challenge to convention in the pursuit to redefine the luxury sports coupe. In doing this, we realized new levels of innovation.

The desire to challenge convention, as highlighted in The Reveal, in which we showcase the LC 500 in Miami, can be found in many of the stories that are featured in this issue of BEYOND. In The Intelligence, we learn how designers are disrupting the fashion industry by incorporating technology into clothing and shoes to create stronger, more durable, more versatile sportswear; and we learn how chefs are using food waste to redefine fine dining. In The Report, we profile three organizations pushing the boundaries of 3-D printing, an industry that is impacting such fields as health care, housing, and travel. And we profile Formafantasma, an Amsterdam-based design duo who this year created the Lexus pavilion at the Milan Design Fair, and who have habitually tested the possibilities of material and form.

Elsewhere in this issue, we visit Lexus' cold test site in snowy Timmins, Canada, where a team of engineers is examining the real-world vulnerabilities of Lexus production models in extreme weather conditions. And we speak to the Japanese interior designer Masamichi Katayama, the man behind the pioneering design of all INTERSECT BY LEXUS boutiques, including the most recently opened iteration, in Dubai.

The common thread throughout this issue—and, indeed, in all that we do at Lexus—is the idea that conventions are there to be challenged and disrupted. The status quo exists to be questioned; innovation is at the heart of progress. It is this mind-set that we foster at Lexus, and it is one that we hope to inspire in others.

TOKUO FUKUICHI

President  
Lexus International



TOM LAMONT  
WRITER

Lamont writes for the British newspapers the *Guardian* and the *Observer*. In this issue of BEYOND, he reports on how 3-D printing is solving previously problematic issues.

ELLIE STATHAKI  
WRITER

Stathaki trained as an architect but now acts as architecture editor at *Wallpaper*. The London-based writer explores the trend behind prefab housing in *The Intelligence*.

ALEX RANK  
PHOTOGRAPHER

Alex Rank is a German photographer whose work has adorned the cover of the renowned *Zeit Magazin*, among other publications. Rank shot the brand-new LC 500 for *The Reveal*.

MAURIZIO DI IORIO  
PHOTOGRAPHER

A self-taught Italian photographer, Di Iorio has shot for the likes of *GQ*, *Marie Claire*, and the *Wall Street Journal*. He captured the ideal work space and *The Recipe for The Intelligence*.

CHRISTOPH MORLINGHAUS  
PHOTOGRAPHER

Working with negative film only, Morlinghaus has shot for the magazines *Wired*, *Monocle*, and *New York*. This issue's *The Lab* took him from his sunny Miami home to snowy Ontario.

CARIN SCHEVE  
SET DESIGNER

Scheve is a Dutch set designer living in New York, where she has styled shoots for *Elle Decor* and *Vogue*. She picked her favorite lamps for the lighting still life in *The Intelligence*.

Illustrations by Luke Wilson

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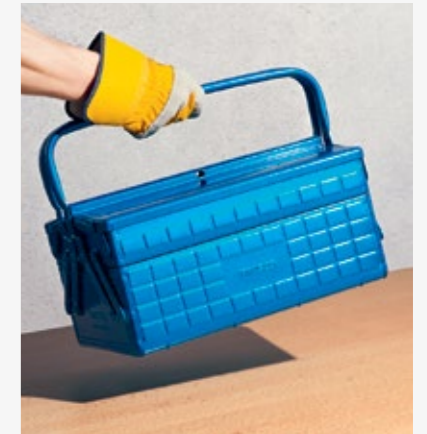
THE FIVE  
THE NEW EAST

We meet the thinkers, innovators, and makers who are shaping Russia's resurgent art and design scene.

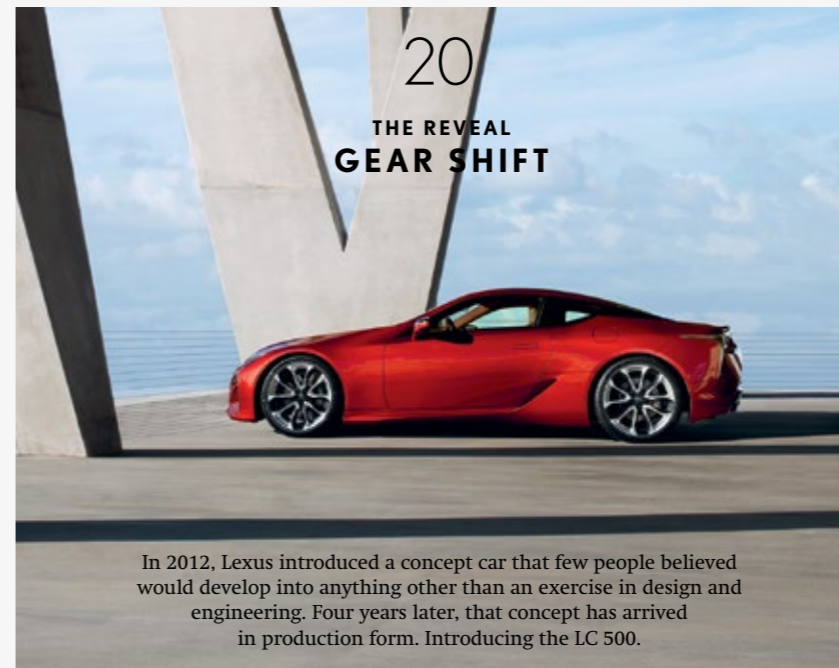
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How a simple workaday object took on cult status: the legacy of the sturdy Trusco Deluxe toolbox.



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In 2012, Lexus introduced a concept car that few people believed would develop into anything other than an exercise in design and engineering. Four years later, that concept has arrived in production form. Introducing the LC 500.

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Around the world, sculpture parks big and small are inviting art lovers to venture beyond the city gallery and into nature.



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With a leading coffee scene, Melbourne is anything but sleepy. We spend 48 hours in Australia's creative capital.



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Combining finesse and function, Kaneko Optical's sunglasses marry traditional design with contemporary craft.



# THE INTELLIGENCE

Next-gen sportswear that goes to extremes, lamps that put everything in the right light, and mile-high cabins that offer a truly first-class experience—here's our investigation of global trends in design, food, travel, and technology

## THE INVENTORY



Photography by Maurizio Di Iorio

Classic stapler Folle (at Choosing Keeping) | Fountain pen LAMY | Notebook Rhodia | Max Bill chronoscope Junghans  
La Discrète lamp Marset | Incalmo water glass Jochen Holz | Cup and saucer Stuart Carey | Coffeemaker AeroPress | Bookends Kyuzo

## JUST THE JOB

*In the age of the brightly colored officeplex, how do you create a personal work space you actually enjoy? Accessorize*

In July 2004, Google opened the Googleplex, a two million-square-foot HQ in San Francisco that contributed in no small part to recent trends in outlandish corporate decor. Now, to please employees, companies around the world paint walls in vivid colors; introduce overly comfortable break areas; and entice staff to use funky interior design elements that, 10 years ago, you would have associated less with a professional working environment and more with a children's playground.

For some, it works. For others, though, the "perpetual yellow glow" of the contemporary office, as one start-up staffer described it, is the bane of a workday that is increasingly busy and pressured. So how do you change your work space to better suit your own needs? With the objects that surround you. Here, we call out a mix of design classics and contemporary pieces that help make your working experience a real pleasure—no matter what the color of the walls. — Alex Moshakis

## THE DESTINATION

## RISE AND SHINE

*In Lisbon, every cloud has a silver lining, as last decade's financial crisis has kindled one of the brightest creative scenes in Europe*

## FIVE TO VISIT

## Tabik

Opened by the young chef Manel Lino, Tabik is a casual space serving modern interpretations of traditional Portuguese dishes. Think plenty of fish.

Avenida da Liberdade 41  
tabikrestaurant.com



## Palacete Chafariz d'El Rei

With just six suites, this converted 19th-century former residential palace is both luxurious and homely. Well located in atmospheric Alfama.

Travessa Chafariz del Rei 6  
chafarizdelrei.com

## Casa das Histórias Paula Rego

Situated in the seaside suburb of Cascais, this gallery is dedicated to the work of Portuguese artist Paula Rego and features a distinctive red pyramid design by Eduardo Souto de Moura.

Avenida da República 300, Cascais  
casadashistoriaspaularego.com

## Companhia Portuguesa do Chá

Selling beautifully packaged tea, including local blends, this store has retained its original oriental interiors.

Rua Poço dos Negros 123  
chacamelia.com



## Pensão Amor

A former brothel in the newly spruced-up Cais do Sodré area, this is the place to mingle with Lisbon's hip crowd.

Rua do Alecrim 19  
pensaoamor.pt



## LOOK OUT

The view from this hilltop garden presents Lisbon as a historic coastal city. A bustling creative community has moved into the terra-cotta-roofed buildings below, reenergizing Portugal's capital.

A view over Lisbon toward Jardim Augusto Gil, a popular public space

Photography by Johannes Nadeexo

It's easy to see why Lisbon is today one of Europe's most popular holiday destinations. Throughout the Portuguese capital, pretty cobbled streets are flanked by pastel-colored houses, vintage wooden trams trundle along picturesque lanes, cafés line shade-dappled squares, and a wide, broad river shimmers in the more than 270 days of sunshine a year.

What may be surprising, though, is how long it has taken Lisbon to emerge as one of the continent's most exciting cities: as recently as eight years ago, Lisbon was a sleepy local capital with little in the way of cosmopolitan attractions. But the financial crisis, which hit Portugal hard, was also the city's redemption. The cost of living dropped after 2008, making Lisbon affordable and attractive to foreign visitors, and as jobs disappeared, young entrepreneurial Portuguese began to go it alone, opening new businesses and building a vibrant creative scene.

Today the city is thriving. Lisbon's food and drink scene is beginning to rival that of cities like Barcelona. Young Portuguese chefs—Manel Lino (see list) and the Michelin-starred José

Avillez among them—are returning home after years abroad, opening exciting, modern restaurants that exemplify the city's new energy.

A contemporary art movement is emerging, too, particularly in Marvila, in the east of the city. Formerly an industrial area, the neighborhood has many warehouses that are now occupied by excellent galleries, mixing a new, increasingly cosmopolitan creative scene with the city's historic fabric and helping Lisbon earn a reputation as being the new Berlin. (Two galleries to visit are street artist Vhils's Underdogs space and Galeria Baginski, which specializes in mixed-media Portuguese art.) The well-respected contemporary art fair Arco Madrid has also become involved: it launched its first international edition in Lisbon in May of this year, with organizers citing the city as a "cultural hot spot with an increasingly dynamic art market."

With days drenched in sunshine, lively nightlife, and a unique culinary community, the city is reemerging with energy and optimism. It is as vibrant and exciting as the creative scene that it hosts. — *Trish Lorenz*

## TECHNOLOGY

## SMART WARES

*From high-engineered survival gear to smart garments and 3-D-printed sneakers, the future of sports apparel is looking anything but run of the mill*



Photo courtesy of New Balance

There was once a time when eager athletes had to rely on stopwatches and maps to measure the time and distance of their activities. Then, fitness wristbands and smartphone apps heralded a digital era for workout routines, allowing users to instantly track—and share—information, from record speeds to energy expenditure. Now, a new wave of smart sports apparel, crafted from high-tech materials, allows users to do more than just monitor the body's performance—it promises to enhance it with intelligent fabric solutions that respond and perfectly adapt to the athlete and his or her needs. Whether it's a stronger-than-steel jacket made from almost-indestructible ceramic particles, a skin-hugging garment with a built-in sensor that blurs the interface between user and device, or a 3-D-printed trainer that imitates the runner's footprint, the future of sportswear is all about pushing extremes, so the athlete can do exactly the same. — *Annick Weber*

NERVOUS SYSTEM  
New Balance

For many, it seems, the future of fashion lies in 3-D-printing—and sports gear is no exception. The technology is increasingly making its way into the manufacturing of running shoes that fit perfectly, custom generated from the wearer's foot pressure data. Via a set of floor sensors, the Massachusetts-based design studio Nervous System measures and replicates the individual shapes and pressure points of the runner's feet to create a 3-D-printed midsole with variable density cushioning that promises to maximize support and minimize the risk of injuries. A collaboration with sneaker giant New Balance is under way, set to be unveiled at the 2016 Boston Marathon.

VOLLEBAK  
Condition Black Jacket

A lot of next-gen sportswear is created by designers who are passionate athletes themselves. Such is the case for Vollebak, whose Condition Black Jacket was developed by founders Steve and Nick Tidball to increase their own chances of survival while taking part in extreme mountain sports, such as backcountry snowboarding, snow kiting, or downhill mountain biking. "We like to describe our pieces as battle armor for adventurers," Steve Tidball claims. The jacket's flexible shell is made from ceraspace, an almost indestructible protection fabric formed from ceramic panels tough enough to tolerate falls at up to 120 kilometers per hour. Only one material in the world is harder: diamonds.

OM SIGNAL  
OMS Smart Box

Canadian tech start-up OMSignal builds wearable technology directly into its range of smart sports tops and bras. The skintight garments are designed to compress the athlete's torso, not only to encourage blood flow during workouts but more so to allow the integrated accelerometers, electrocardiograms, and other sensors to give the most accurate data readings possible. The trend toward wearables is going one step further in Boston: researchers at the Massachusetts Institute of Technology are developing an ingestible sensor with a tiny microphone that measures heart and breathing rates using the sound waves produced by the body's organs.

THE EDIT

# WAY TO GLOW

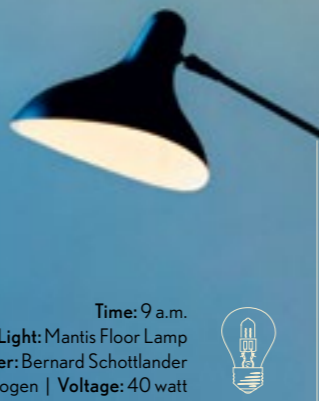
*The level and quality of light affects our mood, productivity, and well-being, so it's no longer enough to know which lamp to buy; we must know which bulb to use with it, too. Here, we illuminate five ideal lighting scenarios for radiant rooms and spirits—from dusk to dawn*

Photography by Joss McKinley and styling by Carin Scheve  
Text by Annick Weber



**Time:** 1 p.m.  
**Light:** Excel Floor Lamp  
**Designer:** Rich Brilliant Willing  
**Bulb:** Spiral Compact Fluorescent  
**Voltage:** 40 watt

The Excel Floor Lamp is equipped with a wide lampshade, providing a halo of natural, sunny light as you're sipping your postlunch espresso on the sofa. The two bright and compact fluorescent bulbs inside the lamp are spot on for helping elevate your energy levels again. A bonus: these make environmental sense. Fluorescents will keep the energy usage of traditional bulbs down by 75 percent.



**Time:** 9 a.m.  
**Light:** Mantis Floor Lamp  
**Designer:** Bernard Schottlander  
**Bulb:** Halogen | **Voltage:** 40 watt



The Mantis Floor Lamp—an original design from 1951—can be rotated 360 degrees around the base with five arm positions to allow for adjustment to any task, making it a versatile light source that is as suitable for the living room as the boardroom. Fit it with a halogen bulb, which will cast a bright, white light over morning newspapers and laptop screens alike—ideal for getting into a business mind-set for the workday ahead.



**Time:** 7 a.m.  
**Light:** Plumb Pendant Light | **Designer:** Anna Karlin  
**Bulb:** Clear Incandescent | **Voltage:** 30 watt

It may still be dark outside while you're having an early morning coffee, but with your kitchen bathed in the glow of Anna Karlin's pendant light, whose globe imitates the sun, it's not just the caffeine that helps awaken you. At this early hour, use a bright, clear incandescent bulb that emits a warm light in all directions—perfect for brightening a tired mind.



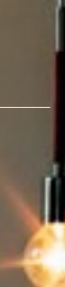
**Time:** 8 p.m.  
**Light:** Stem Light | **Designers:** Jean and Oliver Pelle  
**Bulb:** Clear Incandescent | **Voltage:** 30 watt

As the day draws to a close, the light should be getting dimmer, too. Ideal for suspending above the dinner table, the Stem Light, by Brooklyn design duo Jean and Oliver Pelle, is a classic single bulb pendant with a minimalist aesthetic. Fit it with a 30-watt incandescent bulb, which creates a soft, soothing glow that helps prepare your brain to wind down for a good night's sleep.



**Time:** 4 p.m.  
**Light:** Juniper Thin LED Task Lamp  
**Designer:** Peter Bristol  
**Bulb:** LED | **Voltage:** 40 watt

Peter Bristol's innovative task lamp was designed for the workplace, and allows you to shine with alertness and efficiency throughout the course of the afternoon. Generating maximum coverage while using minimal space, the lamp's ultra-thin body comes with a foldable light engine comprising 33 high-powered dimmable LEDs that bask the desk in more than 500 lumens (40 watts) of warm white light—perfect to help you maintain concentration in the late afternoon.



## FLYING HIGH

*In an age of ubiquitous low-cost carriers, a growing number of passengers are choosing to fly luxury. Peter Baumgartner, chief commercial officer of the Abu Dhabi flag carrier Etihad Airways, explains why*

Until recently, seasoned travelers had long lamented that air travel just wasn't what it used to be. Stuck in our minds were images of lobster thermidor courses on board a three-and-a-half-hour Concorde flight across the Atlantic, or in-flight piano lounges on board a Boeing 747 circa the 1970s. Jet travel, it seemed, had a golden age, which nobody in today's world could quite understand.

But there are a handful of airlines keen to recall and reinvent the premium travel experience of a bygone era. It's no longer enough to serve a rare vintage or dangle a moist towelette in front of passengers who are increasingly willing to spend more money to sit up front (or up top). As business travelers once again pay for premium seats and more of the world steps into the air travel fray, the demand for an unparalleled sensory and spatial experience is growing. The Abu Dhabi-based airline Etihad has risen to this challenge, thus ascending through altitudes at which others are leveling off. We speak to Peter Baumgartner, Etihad's chief commercial officer, about its approach.



The lounge of The Residence, with its Poltrona Frau leather seating

Etihad's A380 has 498 seats, of which 70 are Business Class, nine are First Class, and two are for The Residence

**Q** First-class ticket sales have doubled in 10 years. How do you explain that?

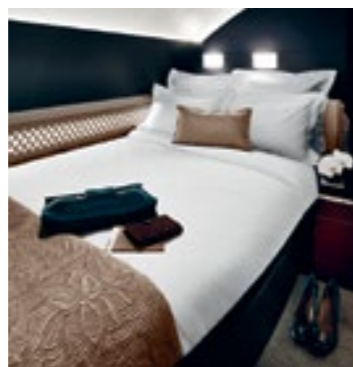
**A** We live in a day and age where everything is possible, anywhere, and at any time. There is no reason why this wouldn't count for flying. Discerning air travelers expect more than getting from A to B—they demand an unprecedented level of comfort and luxury, akin to the establishments they are staying and dining in while traveling. We see first-class cabins as the answer.

**Q** How has Etihad reacted to this trend?

**A** There is a healthy demand for luxury travel to and from the Middle East and beyond. Ever since we launched flights from Abu Dhabi in 2003, the development of our first-class product has been a key



The private bedroom features a six-foot-long double bed with soft Italian linen



focus. Most good airlines offer business or premium class, but we wanted to provide something better, resulting in our First Apartments—a series of one-room suites installed on the upper deck of our A380 and B787—and The Residence, the world's only totally private three-room suite on a commercial airliner.

**Q** How is this offer different from others?

**A** We did not benchmark against other airlines but instead drew inspiration from the world's best hotels and dining establishments—from the Savoy-trained private butler on The Residence to the luxurious Poltrona Frau leather seating. The bedroom is furnished with a natural-fiber mattress and adorned with Egyptian cotton sheets and bedding by Pratesi.

**Q** What was the design process behind The Residence?

**A** Etihad Airways worked in collaboration with a consortium of three leading UK design agencies and one research agency to develop design concepts. Preferred designs were built into a full-scale mock-up of the upper deck of the A380 at a secret warehouse location close to Heathrow Airport in London, and we interacted with the aircraft manufacturers to understand the technical interfaces of the new concepts into the aircraft. The project began in 2008, and we launched flights in December 2014.

**Q** Who is your typical first-class passenger?

**A** The majority of our guests would normally fly on a private jet. In many cases, they demand total privacy and discretion, which is of course the norm for VIP and private air travel, but not for other commercial aircraft, making our product a world first and a true alternative for this sector. — *Annick Weber*

Photography courtesy of Master Films / P. Masclet

Illustrations by Thibaud Hérem

## PREFABULOUS

*The relationship between prefabrication and architecture is long and well recorded. Recently, however, architects have been giving the proven combo a luxury overhaul*



### Sol Duc Cabin, by Tom Kundig

*olsonkundig.com*

Prefab doesn't have to mean mass production. Most of the parts for this small, perfectly formed one-off project in Washington were assembled onsite for minimal waste and disruption to the site.

Creating efficient and aesthetically appealing buildings is the Holy Grail for every architect, and the possibility of using precast elements to achieve better results faster has offered restless, creative minds ample motivation to experiment over the centuries. In the 1940s, Jean Prouvé assembled aluminum prefab houses. In 1972, Kisho Kurokawa created the Nakagin Capsule Tower, made of stacked detachable units.

But the prefab has historically always been about speed, affordability, and often mass production, seemingly precluding time-consuming hand craftsmanship, expensive materials, and customization—all elements intrinsic to the idea of luxury. For years, prefabrication and luxury appeared to be mutually exclusive. That is, until now.

Inspired businesspeople and creatives have recently set out to prove this assumption wrong, heralding a new era in the sector that is fueled by the market's insatiable need for new housing and high design standards. The well-traveled, design-aware professional classes have created a growing demand for quality architecture that can be simultaneously aesthetically pleasing, clever, accessible, environmentally friendly, and—why not—relatively affordable, and it seems perfectly aligned with prefabrication.

The landscape is steadily but surely changing. Developers are engaging with the world's leading architects to create high-end, limited-edition designs. Designers are making the most of prefabrication techniques to help realize boutique, one-off projects. And in development are ideas that attack head on the preconception that customization in prefabrication is an oxymoron, busting the myth that they always result in a standard, cookie-cutter design for all. Want proof? See below for a list of some of the best examples of the genre. — *Ellie Stathaki*

### BIJOU PREFAB PROJECTS

#### Pinwheel, by David Rockwell and C3

*rockwellgroup.com*

Rockwell's scheme offers lush, customizable interior design elements—a study that can be converted into a third bedroom, say—that easily adapt to specific homeowner needs, unlike concrete forms built on-site.



#### 79 & Park Housing, by Oscar Properties

*big.dk*

This large-scale housing project in Stockholm consists of a stepped glass-and-cedar wood building featuring cascading green roofs. The structure's standardized, pixel-like forms make manufacturing at this scale much more affordable, quicker, and easier to manage.



#### Revolution Precrafted, by Robbie Antonio

*revolutionprecrafted.com*

This concept involves leading architects, such as Zaha Hadid, who created the above Volu dining pavilion for the project. Blending cutting-edge design with lightweight engineering and precision fabrication, Hadid's contribution is digitally—and therefore relatively affordably—created off-site.

## NOTHING LEFT

High-profile chefs are championing zero-waste cooking, with the aim of using every ingredient in its entirety. We report on an age-old movement that has become the culinary zeitgeist



When René Redzepi, the head chef at Noma, in Copenhagen—four times crowned the world’s best restaurant—says he’s going to close up shop and relocate to an urban farm, you know he won’t be serving lentil bakes and carrot cakes. The high priest of the new Nordic culinary movement is already finding kelp jelly, dried reindeer lichen, and milk skin passé, so it’s time to find a new kick. An asphalt parking lot in Copenhagen is to be transformed during 2016 into a new Noma, one that will aim to be zero waste.

Redzepi’s not alone in zeroing in on waste; the Food and Agriculture Organization of the United Nations released an estimate that one-third of the food produced in the world is thrown away. Many restaurants have been seeking ways to cut down on food miles, reduce greenhouse gases, and end the throwaway food culture typical of industrialized countries. Local ingredients are sought, not flown in; the number of meat dishes (with their high carbon footprint) is reduced; food waste is lessened by careful stocktaking and fanatical recycling.

Cross the pond and you’ll find one of the true heroes bucking the food-waste trend. Dan Barber is the chef at Blue Hill, in Manhattan, best known for its farm-to-table approach. But in March 2015, he turned Blue Hill over to an experimental pop-up called wastED, which prepared only food waste for 19 days. Critics descended with knives drawn—and loved it. Dishes included carbonized pig bones, preserved monkfish tripe, and fermented pineapple-skin granita.

Yet minimizing waste is hardly a new thing. Just a 10-minute walk from Noma’s new site is Spiseloppen, an exceptional restaurant set up by former anarchists in Christiania, a neighborhood founded by squatters. Running since 1993, Spiseloppen has a remarkably conventional menu for a self-proclaimed autonomous neighborhood—chicken breast with pommes Anna, for example—but it has been operating a minimal-waste policy for 23 years. And the work of the Free-town Christiania chefs makes them seem like arrivistes when

it’s compared with the UK’s wartime rationing efforts in the 1940s. Mrs. Beeton was renowned for her exhortations to be thrifty in the 1860s. Eve was probably chastised for throwing away that apple core.

Despite this long history, the zero-waste movement is of the moment. Hundreds of restaurants in the United Kingdom have begun operating minimal-waste policies—responsible waste management, better energy efficiency, reduced water consumption—without making a big noise about it. Some have also submitted to the rigorous vetting procedures of the Sustainable Restaurant Association (SRA). The approved ones make it onto the SRA’s website, called Food Made Good.

To answer the “why now” question, it’s essential to look at the food industry in affluent countries. Food is cheaper than ever before, and waste is commonplace at all stages of the food chain. (Competitive eating events actually *celebrate* gluttony and waste.) The zero-waste movement is one manifestation of the reaction to this, a cry of “Enough!” by chefs and diners who care about where their food comes from and don’t want to see it wasted.

The freegan movement—where urban foragers raid super-market trash for spoiled food—has been much studied by anthropologists, and the zero-waste movement is the latest manifestation of this long-established rejection of a spend-thrift food culture. To contemporary anthropologists, the unorthodox food exclusions and preparation methods used by freegans and zero-waste practitioners are not solely about saving the planet; they serve the same purpose as other food taboos. A zero-waste philosophy is used to delineate those who participate and those who don’t. It’s a way for an intellectual elite of deeply committed food enthusiasts to distance themselves from what they perceive as an indifferent general public. Critics might call the zero-waste movement a form of inverted snobbery. I’d call it a much-needed reaction to a wasteful and dysfunctional food chain—and René Redzepi and many others would agree. — *Guy Dimond*

Illustration by Bratislav Mitenkovic

Photography by Maurizio Di Iorio



## A FISH OUT OF WATER

Cooking up one of his favorite dishes, Korean-American chef Corey Lee reveals how he makes a much-dismissed Asian food staple attractive for Western plates and palates

Used as the base for broths and soups, dried anchovies are to Korean cooking what chicken stock and dashi are to Chinese and Japanese cuisine. With its intensely fishy and salty taste, however, the pungent ingredient divides opinions of Western diners. But for Corey Lee, chef-patron of Benu, in San Francisco, anchovies have held a key place on his menus ever since opening his now three-Michelin-starred restaurant in 2010. “With some ingredients, using them well is about being able to tame their flavor,” explains the Seoul-born chef and pioneer of modern Asian food. “Many people seem to be wary of anchovies, but

the preparation for my potato salad makes them very approachable.” For this dish, he sautéed the extra-small variety that can be eaten whole, and balances it with creamy mayonnaise, a hard-boiled egg, and a delicate champagne vinegar dressing, before topping the concoction with celery leaves and chili. “When sautéed, anchovies have a crispy texture, as you’re eating whole fish in a single bite,” says Lee. “I get great satisfaction in seeing our guests enjoy this ingredient that’s so important in Korean cuisine, in particular when it is something that’s never appealed to them before.” — *Annick Weber*

### ANCHOVY POTATO SALAD

Serves 2

#### FOR THE SALAD

150g yukon gold potato, or any waxy variety, steamed, cut into 1/4-inch dice | 1 hard-boiled hen’s egg | 30g celery finely diced, lightly blanched | 50g mayonnaise | 1.5g salt | 30g pickled red onion

#### FOR THE ANCHOVIES

160g champagne vinegar | 160g sugar | 40g tamari | 0.4g cayenne pepper | 200g water | 100g extra-small dried anchovies | 30g sesame oil | 1 clove garlic | 20g red pepper, minced | 20g sesame seeds

#### TO FINISH

Celery leaves | red chili, in fine strips

1. Incorporate all the salad ingredients while the potatoes are still warm. Chill.
2. To prepare the anchovies, reduce the vinegar, sugar, tamari, and cayenne to a glaze. Add water and set aside. Heat the sesame oil with garlic and sauté the anchovies until lightly caramelized. Add the red pepper, sesame seeds, and enough glaze to coat. Allow to cool to room temperature.
3. To finish, arrange the anchovies on top of the potato salad and garnish with chili and celery leaves.



# HIGH NOTE

*Laser etching is used in the making of some of the world's finest musical instruments. Now it has been applied to the all-new Lexus RX, too*

Text by Sam Mitani and photography by Greg White

In 2012, Takayuki Katsuda, the chief engineer of the Lexus RX, asked Yamaha Fine Technologies (YFT), a division of the Yamaha Corporation, to create a wood interior element unique to the RX. Katsuda believed that Lexus' popular SUV was luxurious, but not luxurious enough. He wanted something more: to make the SUV completely unique, like nothing else in its class.

YFT knows a thing or two about working in high-quality wood finishes—Yamaha is renowned for manufacturing award-winning grand pianos, violins, violas, and cellos. For the Lexus job, the division proposed to use a laser-etching procedure that would introduce sophisticated wood ornamentation into the RX's center console. Katsuda, suitably impressed, said yes. Production began last year.

The resulting element is an elegant piece of craftsmanship that elevates the

**THIS ELEMENT IS AN ELEGANT PIECE OF HIGH-END CRAFTSMANSHIP THAT ELEVATES THE RX'S CABIN FROM BEING LUXURIOUS TO BEING COMPLETELY UNIQUE**

RX's cabin from being luxurious to being completely unique. But making the component is not easy. The entire 14-step process takes roughly eight weeks and involves dozens of supremely qualified craftspeople. Sheets of high-quality sapele wood are imported from Africa, bonded to a thin layer of aluminum, and later stained, to remove the wood's natural reddish hue.

Then the magic happens. A laser burns away the surface of the wood in precise straight lines, revealing the aluminum beneath and creating a sharp contrast between the two materials. There is variation in the way each piece of wood burns, so the equipment's settings are constantly monitored for quality. And no two pieces of wood have the same pattern, so each element is entirely unique.

It's notable that the brand decided to use the process in the RX, one of its most popular models. "While the L-Select LS model in Japan had a laser-etched emblem," says Naoyuki Kitamura, of YFT's Automotive Component Division, "we needed to really refine and evolve the process for the RX, because it marks the first time we incorporated it in this way into a production model being made worldwide." ☺



# STEEL OF APPROVAL

*How a Japanese-made toolbox hit the nail on the head with seamless engineering and a no-frills, utilitarian design*

Text by Nicole Swengley and photography by Thomas Albdorf



The Trusco toolbox, here fully packed with tools. Smaller items can be stored in two cantilevered trays; larger items are kept in the undivided lower level.

If proof were needed that basic engineering can raise the status of a humble workaday object to that of a cult icon, then the rugged Trusco Deluxe toolbox is the perfect example. Instantly recognizable by its bright blue enamel finish, this handsome yet utilitarian toolbox is ranked as a best seller at that revered shrine of supercool design, the Museum of Modern Art, in New York, selling in the millions worldwide since its release.

Manufactured by the Osaka-based manufacturer Toyo Steel, the box was designed in 1969 by Keiyu Hisashi, who founded a steel press factory in 1965 and became Toyo Steel's first president when he established the company in 1969. Looking for an original design to produce, Hisashi's market research revealed a demand for robust toolboxes. Ten other companies were producing toolboxes at that time, but none were making them from steel. For many years Hisashi's design was sold only in Japan,

and then Trusco Nakayama Company, a Toyo Steel affiliate, started selling the boxes under its own brand name in 2003. Now the toolbox is available from online retailers offering international delivery—as well as from MoMA.

The design's success lies in employing the drawn press method of sheet-metal forming, which makes the box seamless and increases its strength and durability. Solidly constructed from stamped steel, it has an eye-catching, blue enamel finish chosen by Hisashi to emulate metallic car paint. A distinctive profile and double carrying handles add character, while heavy-duty hinges allow the lid to be opened from either side in a single, smooth action. Two cantilevered trays swing out, each offering three compartments whose sizes can be adjusted using the removable dividers. Larger items, such as hammers and wrenches, can be stored in the undivided lower level. The box is big enough to house a variety of tools and accessories as well as smaller bits and pieces (overall it measures 11.5 inches high by 14 inches wide by 8.75 inches deep), yet it is sufficiently compact to carry easily from the car to the house, say, or to the yacht.

Above all else, the Trusco toolbox is a practical piece of gear. Heavy-duty hinges allow the lid to be opened in a smooth action. The toolbox's color was selected to emulate metallic car paint.

What, you might wonder, is so special about a basic toolbox when many equivalents are readily available in hardware stores? Primarily, it is down to a clever combination of design, engineering, material, and color. The use of a durable, honest material—solid, seamless steel—combined with simple yet effective mechanics and an inspired color choice gives the Trusco Deluxe toolbox an edge over less sturdy, less appealing versions. MoMA's decision to sell it online and in its shop bestows a stamp of appreciation from a recognized design authority. This, you can be assured, is one supercool design. Yet the Trusco Deluxe toolbox has developed neither airs nor graces over the past 47 years. It remains as frills-free and functional as it was on the day it was designed.

Uses for this capacious container are as varied as its owners' requirements. It is perfect, of course, for transporting and storing tools, but the box's individualized compartments could also house personal accessories, haberdashery, a first aid kit, even cosmetics. Subsequent generations will, no doubt, find new applications for this engaging heritage design. Equally, they may simply continue to enjoy using this remarkably fine toolbox for its primary purpose. ☺



## G E A R



Text by Sam Mirani

## S H I F T

*Four years ago, at the North American International Auto Show, Lexus unveiled the LF-LC, a sporty two-door concept model that signaled a major shift in the way we approach the design and making of our cars. Now we're back with a concept-to-production model that redefines the luxury sports coupe segment. Introducing the LC 500*



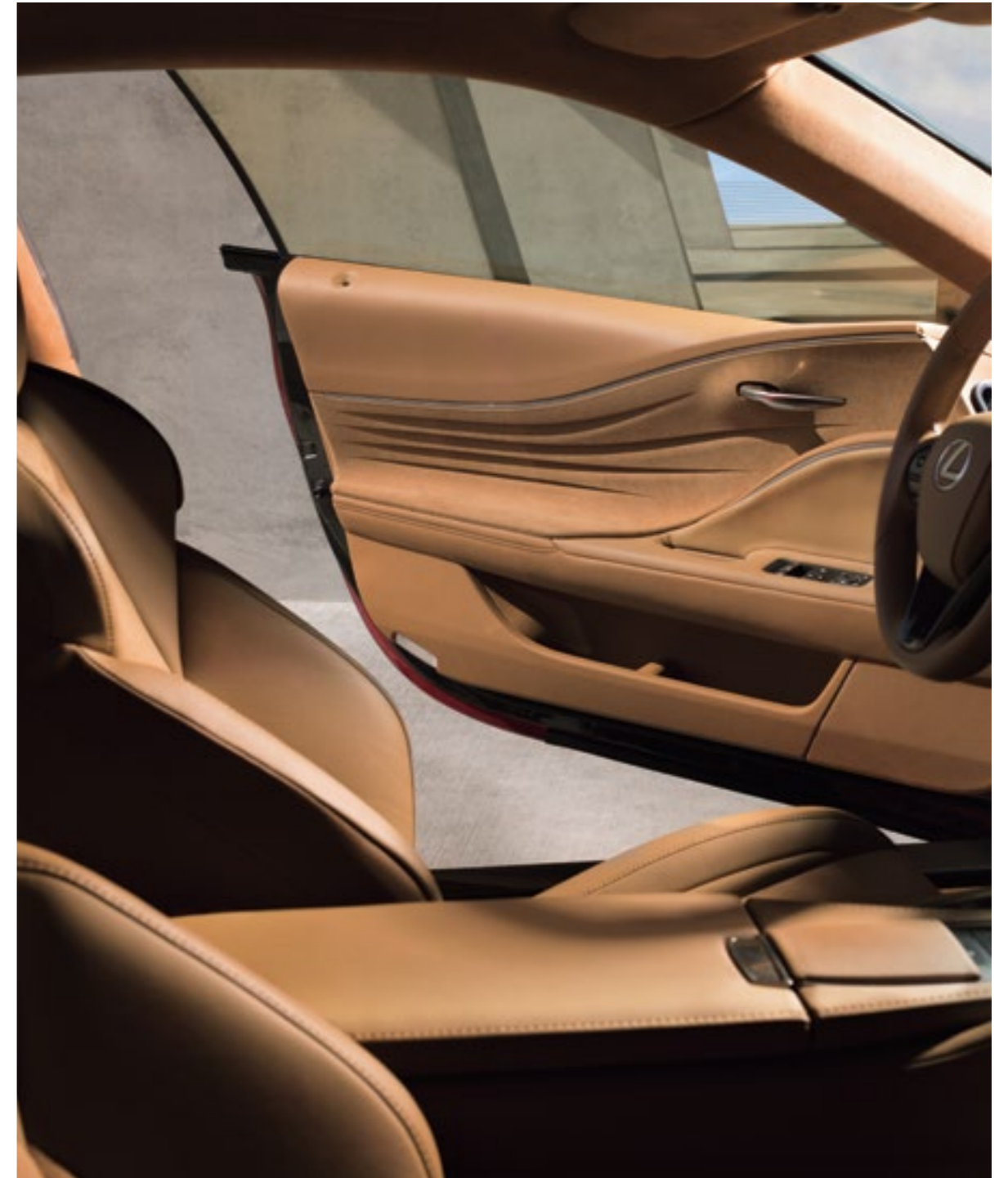
Photography by Alex Rank



### AN EVOLUTION

The LC 500 symbolizes the beginning of a new phase for the Lexus brand and represents a greater synergy between engineering thinking and design ideologies. Study the exterior of the new coupe carefully and you'll notice that an extraordinary level of attention has been devoted to the details.





#### **ON THE INSIDE**

The interior styling of the LC 500 is influenced by the exterior's theme of dynamic luxury. The model's engineers focused on creating a thrilling and engaging experience for the driver, yet an elegant and welcoming environment for the passenger.



#### FRONT AND CENTER

The familiar spindle shape is evident in both the front and rear of the LC 500. The centerpiece of the attractive face is a powerful interpretation of Lexus' signature spindle grille that features a new, striking form. Multilayered tail lamps with a unique lighting effect highlight the rear end.





### BEST IN CLASS

The LC 500 redefines the luxury coupe segment. With the stiffest chassis Lexus has ever produced, and the potent high-revving 5.0-liter V8 engine under its hood, the model will deliver excellent handling character and plenty of power on a rural tour, yet offers the smoothness and civility of a true luxury car when cruising on the open highway.

It's a rare occurrence when a car manufacturer develops a concept model into a production vehicle with its form virtually unchanged, but that's exactly what Lexus did when it unveiled the LC 500 at the North American International Auto Show (NAIAS) earlier this year. Based on the LF-LC, a show car that was first introduced in 2012, the LC 500 is the latest representation of Lexus' evolution in both emotional styling and dynamic driving. Akio Toyoda, chief branding officer and master driver, is leading this global transformation, personally encouraging the collaboration between design, engineering, and marketing teams.

"The LC 500 has been an important product for Lexus and me personally," Akio says. "A few years ago, we decided to guide the future of the brand with products that had more passion and distinction in the luxury market. This flagship luxury coupe's proportions, stunning design, and performance make a strong statement about our brand's emotional direction and will grow Lexus' appeal globally."

The term *showstopper* barely alludes to the LC 500's presence at this year's show. More than a thousand journalists gathered for the Lexus press conference to witness firsthand its unveiling. The car was honored by the prestigious EyesOn Design awards at NAIAS, taking home prizes for best production car and best interior, making it the only car this year to win two awards. It also marks the first time in history that the same car has taken home awards for both best production car (2016) and best concept car (the LF-LC took that prize in 2012).

That the LC 500 shares many of the design cues of the LF-LC is obvious at first glance. To be able to bring the concept car, essentially a design study, to a near-replica production model is a remarkable feat, and it represents a heightened relationship between design and engineering groups, who have worked to overcome each other's hurdles. The sporty coupe's visual appeal is defined by a low hood, provocative curves, a flowing carbon-fiber roof, and a low, wide stance. The front fascia is highlighted by a powerful interpretation of Lexus'

signature grille, bordered by chrome on three sides and featuring a radical new mesh design that varies its visual tension. Curves and flowing lines are consistent throughout the sheet metal, including a rear end that features slim taillights in the form of a sequential L motif.

The interior of the LC 500 matches the elegance of the exterior, featuring materials such as the high-quality fabric Alcantara and a striking dashboard. The driver's seat is sporty and dramatic; hip and heel points have been lowered, so feedback is more communicative. Lexus engineers put considerable effort into creating an engaging driving experience, focussing on details such as the size and angle of the steering wheel, which features a change in cross-sectional shape throughout the rim circumference. One automobile journalist wrote that Lexus had "won the Detroit Motor Show with its new flagship coupe." Safe to say, then, that when the model is introduced to the public in 2017, it will make the strongest statement yet about the brand's future product direction. ☺

### LEXUS LC 500

<b>LENGTH</b>	4,760 mm
<b>HEIGHT</b>	1,345 mm
<b>WIDTH</b>	1,920 mm
<b>WHEELBASE</b>	2,870 mm
<b>SEATING CAPACITY</b>	4
<b>DRIVEN WHEELS</b>	Rear Wheel Drive
<b>HORSEPOWER</b>	467 HP@7,100
<b>TORQUE</b>	389 lb.-ft@4,800
<b>TRANSMISSION</b>	10 speed Automatic
<b>Fr/Rr OVERHANG</b>	Fr: 920 mm, Rr: 970 mm
<b>WHEEL SIZE (Fr and Rr)</b>	21 inches
<b>TIRE</b>	Fr: 245/40 RF21 Rr: 275/35 RF21
<b>0-60 MPH</b>	Under 4.5 seconds

Product and specifications may vary by country





# THE NEW EAST

Russia's art and design scene is booming. In Moscow, businesswoman Dasha Zhukova recently transformed a Soviet-era cafeteria into the Garage Museum of Contemporary Art, a hip cultural institution already exerting international influence. And around the country, young artists, designers, facilitators, filmmakers, and fashion designers are establishing themselves among a global scene that had, until recently, wrongly dismissed their home country as a cultural wasteland. We meet five members of Russia's new creative set—a rising generation of talent and ambition.

Text by Charlotte Philby  
Photography by Trent McMinn

**"CHANGING PEOPLE'S MIND-SETS AND THEIR CULTURAL ATTITUDES IS THE QUICKEST WAY TO CHANGE THE PHYSICAL LANDSCAPE"**

01 VARVARA MELNIKOVA

STRELKA INSTITUTE  
Chief Executive Officer

Varvara Melnikova in her office at the influential Strelka Institute for Media, Architecture and Design, in Moscow

"Strelka's programs are about developing human capital and boosting creative energy," says Varvara Melnikova, CEO of the Strelka Institute for Media, Architecture and Design, a nongovernmental organization based in Moscow. "Changing people's mind-sets and their cultural attitudes is the quickest way to change the physical landscape."

The Strelka Institute was founded in 2009 to reimagine the cultural and physical landscape of Russian cities. An educational program developed to facilitate positive urban change, it launched out of a cultural vacuum that extended throughout Moscow and into the rest of Russia. In the seven years since then, the institute, its consultancy firm offshoot (KB Strelka, of which Melnikova is also a partner), and its students have contributed to the redevelopment of both Gorky Park and the Polytechnic Museum, helping shape a change in values and offering real and viable alternatives for Russian cityscapes in the process. "There was no interest in the subject of urbanism when we started out," Melnikova, a mother of two, explains. "Now it's different. The city, both as a topic and as a market, is now of interest to the government as well as citizens and businesses."

Future cities in Russia and around the world will face new challenges, Melnikova says, which will involve developing cityscapes for inhabitants who have "a digital way of thinking." "The digital sphere is closely integrated with the real world," she explains, "and we're excited to implement that thinking into all of our programs and approach. This will provide us with new tools for ongoing development and education."

02 ALINA RUDNITSKAYA

Documentary Filmmaker



Alina Rudnitskaya, an award-winning director, at the documentary film studio LenDoc, in St. Petersburg

Alina Rudnitskaya's journey to filmmaking was a circuitous one. "I did not like documentaries," she says. "At art school, I fell in love with movies. But then when I started to study more and was exposed to documentaries, what I loved was the delivery process. You start out with an idea and you just see where it leads and follow it."

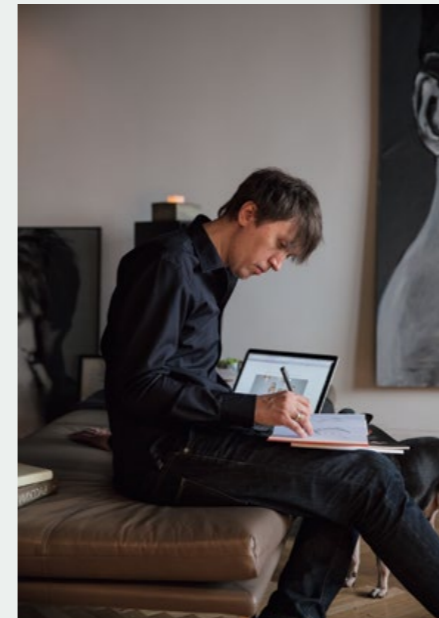
Over the past decade, this approach has seen Rudnitskaya earn international critical acclaim for her unapologetically raw and occasionally ridiculous pieces, including the award-winning *Blood* (2013)—following a team of medics traveling through remote regions of Russia to collect blood—and *Bitch Academy* (2008), which documents a St. Petersburg school for women hoping to attract millionaire husbands.

Born and raised in St. Petersburg, where she continues to live, Rudnitskaya hopes to convey a wider cultural message through the exploration of personal stories. "My country has changed several times," she says. "I have lived in socialism, capitalism, and now I am living in feudalism. Films reflect the numerous problems, show the illness in our society. I think a good film should give a message encouraging social reform and give us entertainment, too."

**"A GOOD FILM SHOULD ENCOURAGE SOCIAL REFORM AND GIVE US ENTERTAINMENT, TOO"**

03 DIMA LOGINOFF

Product Designer



Dima Loginoff, a product designer and one of the few Russian designers collaborating with major global design brands, in his Moscow home

"I design lighting, but I'm not a lighting designer," says Dima Loginoff, whose award-winning creations have earned him accolades including best designer at the Elle Decoration Best of the Year awards in 2014. Although he is most well-known for his sculptural pendant lamps, his celebrated projects also include collaborations with major global brands—sofas for Artex, a collection of ceramic tiles for the revered Turkish manufacturer Vitra. Loginoff is the first Russian designer to work with that brand, and the collaboration represents a milestone for both him and the Russian scene. "Working with me was kind of an experiment for them, because they had never worked with Russian designers before," Loginoff says. "[But] the company is so open-minded."

Loginoff works from a home office in his Moscow apartment, where he feels "free in myself to design good products," he says. He aspires to continue to work outside his comfort zone, trying his hand at textiles, porcelain, and tableware, and raising the profile of Russian design around the world. "To get a range of experience is very interesting for me," he explains. "I don't like constraints."

**"I PREFER TO WORK AT HOME BECAUSE I NEED TO FEEL FREE IN MYSELF TO DESIGN GOOD PRODUCTS"**



“People know a lot about culture from Russia’s past,” says Nonna Materkova, founder and director of Calvert 22 Foundation, an organization promoting Eastern European contemporary culture. “But when it comes to contemporary Russian culture, my country is underrepresented in the West.”

It was the idea of bringing largely unseen Russian talent to the public sphere that first inspired Materkova to launch a nonprofit space in East London back in 2009, and her team has since showcased art and culture from across Eastern Europe. Also producing *The Calvert Journal*, a critically acclaimed online “guide to the contemporary culture of the new east”, for Materkova this whole project is about education and ambition. Her latest endeavor, the Calvert Forum, will fly specialists from international creative industries to remote parts of the former Eastern Bloc to educate and inspire in local settings.

Showing no signs of stopping there, Materkova has grand plans for the future. An economist by training, she now recognizes the power of the creative industry. “I want to help turn St. Petersburg into a thriving international city rivaling the likes of Berlin,” she says. “If we could create the infrastructure to support more people, we could attract young creatives. I would love to see that.”

Nonna Materkova, founder and director of Calvert 22 Foundation, surrounded by contemporary Eastern European art at her gallery

**“WHEN IT COMES TO CONTEMPORARY CULTURE, MY COUNTRY IS UNDER-REPRESENTED IN THE WEST”**



Growing up in suburban St. Petersburg, Tigran Avetisyan never imagined he would become a fashion designer. “I was into drawing and making things,” he says, “but I never could have thought I would end up making clothes.”

As a 21-year-old, Avetisyan moved to study product design at Central Saint Martins, a prestigious art school in London, but he had a sudden change of heart and transferred into the college’s revered menswear course. He has since made his name as one of the most exciting designers in the world, part of a growing band of young Russian creatives who are exploding in vivid Technicolor on the international scene against an increasingly gray political backdrop at home. Avetisyan describes his clothing as “fashion that is extremely fashionable,” and his pieces are now stocked in stores from Milan to Shanghai, including Opening Ceremony in the United States and Joyce in Hong Kong. He says that his namesake designs are aimed at men and women of all ages and races. “My stuff is very tolerant,” he says. “Really there are no barriers. I know in Russia it’s mainly girls who buy it, as guys tend to be very conservative, but in Asia it’s very popular with guys.”

Finding London too demanding, Avetisyan moved to Moscow after graduating in 2012, with the backing of the LVMH Prize for Young Fashion Designers. Inspired by Russia’s rich cultural history, he likes the pace and spirit of the city he now calls home, and he intends to keep producing similar clothing, while working on interesting collaborations. “To me, growth is important, but integrity is much more important,” he says. “I like to explore my world and my limits while staying true to myself.” ☺

Tigran Avetisyan, the exciting fashion designer, in his Moscow studio

**“TO ME, GROWTH IS IMPORTANT, BUT INTEGRITY IS MUCH MORE IMPORTANT”**

# O U T S I D E R S

From the lush Brazilian rainforest to the bone-dry Qatari desert, sprawling sculpture parks are bringing art to life beyond the four walls of the gallery. We cast our eyes over five state-of-the-art examples

Text by Liv Siddall



One of four pillars that make up Richard Serra's *East-West / West-East*. The pillars are constructed of dark steel and have been designed to transform in color over time, slowly rusting to a deeper shade of red

Photography by Adrian Gaut

## EAST-WEST/WEST-EAST THE QATARI DESERT

Not so much sculpture park as the American artist Richard Serra boldly capturing and reimagining an entire landscape, *East-West / West-East* is the revered sculptor's latest work, commissioned by Qatar Museums and set in the depths of the Qatari desert. Comprising four 15-meter-high vertical steel plates, the sculpture correlates with the jutting, elevated ridges of land on either side, encouraging viewers to invest in closer inspection.

From a distance, these tall pieces of steel look like figures mournfully crossing the desert, designed to transform over time in color and texture as they feel the force of desert storms. From the side, the sheets appear razor thin, creating the illusion that someone has used a rule to draw a line through the sky. Serra's intentions are ambiguous, which is true of much of his work. Here he allows viewers to form their own opinions.

So how does one reach these towering pillars? The American art critic Hal Foster describes it like this: "To arrive at the desert site, you drive west from Doha for 40 miles,

passing one construction site after another on a vast freeway, and then, suddenly, the landscape becomes almost lunar in its vacancy. Exiting via Camel Underpass No. 7, you travel seven or eight more miles on a makeshift road until the sculpture appears in the distance. Depending on the time of day and year, you are likely to be alone." Easy.

### SCULPTURE PARK SCALE

SIZE: ●●●

ACCESSIBILITY: ●

KEY PIECE: The key piece here is the piece itself—four 15-meter-tall columns. But the landscape plays an equally important part. Serra has been playful in creating a piece that cuts lines into the topography, any way visitors look.

### SCALE LEGEND:

SIZE: ● = small ●●● = large

ACCESSIBILITY: ● = difficult to get to

●●● = easy to get to

## INHOTIM

BELO HORIZONTE, BRAZIL

Of all the world's sculpture parks, a magnificent 5,000-acre piece of land on the outskirts of Belo Horizonte, in the east of Brazil, is perhaps the most treasured among its country's residents. Inhotim is the story of a dream made real: a man's desire to save a section of the country's exquisite environment from developers and create a space that everyone could visit. Back in 2006, its founder, Bernardo Paz, worked with the landscape architect Roberto Burle Marx to transform this enormous piece of land into stunning botanical gardens. And within those gardens, nestled in valleys and tropical woodland, lie varying sculptural treasures created by artists from all over the world, including Matthew Barney, Olafur Eliasson, and Doug Aitken.

Last year, Inhotim celebrated its two-millionth visitor since opening in 2006. With a door price of only \$40, the public institute encourages people from all walks of life to step into this strange, ecological wonderland and find peace. Above all, Paz wants not only to provide local communities with direct access to cultural assets and astonishing pieces of art, but to connect them with science and nature, too. The botanical gardens are areas of conservation and study, where new species are cataloged and educational programs are offered to both adults and children. For Paz, this is just the beginning: he has plans to expand Inhotim, and is developing ideas for attracting more people to visit as well as to live and work in the park.

### SCULPTURE PARK SCALE

SIZE: ●●●

ACCESSIBILITY: ●●

KEY PIECE: Inhotim features various pavilions throughout its grounds—they act as focal points for visitors. The most impressive is a cube-like building that houses two sculptures by the artist Adriana Varejão and overlooks an inviting pool of water.

WEBSITE: [inhotim.org.br](http://inhotim.org.br)

The Galeria Adriana Varejão pavilion was designed by Brazilian architect Rodrigo Cerviño Lopez, who partially inserted a reinforced concrete block in the hillside to respect the site's original topography



Photography by Eduardo Eckentels

## NEW ART CENTRE

WINTERSLOW, UNITED KINGDOM

Tucked away in Winterslow, a tiny parish between Salisbury and Winchester, in southern England, is Roche Court, a building that dates back to 1804 and that for the last 20 years has been transformed into a spectacular sculpture park. The New Art Centre was founded in London's Sloane Street in 1958 and relocated to Roche Court in 1994, and now the estate boasts a fine collection of large-scale works, including pieces by Anthony Caro, Michael Craig-Martin, Antony Gormley, Richard Long, Alison Wilding, and Bill Woodrow.

"From its beginnings, the New Art Centre gave opportunities to many young modern British artists, and we continue this approach today, exhibiting new and emerging artists often for the first time," says Stephen Feeke, the gallery's director. "We also organize exhibitions that reexamine the work of major British artists of an earlier generation, whose careers have coincided with

the long and rich history of the gallery and which we now feel warrant wider attention."

For some visitors, the exquisite landscape—the park spans across picturesque rolling hills and woodland—and the modified architecture of Roche Court is a draw in itself. (In 1998, the architect Stephen Marshall was commissioned to transform the existing building by connecting its grand elements with sleek glass galleries that, from within, frame the astonishing, art-scattered hills surrounding them.) But for others, it's all about the park's excellent curation. "We feel that it is terribly important to mount exhibitions of artists who had important careers but who might easily be overlooked or forgotten," Feeke says. "We feel that by doing so, we can help make a contribution to the wider knowledge of art from the recent past."

### SCULPTURE PARK SCALE

SIZE: ●

ACCESSIBILITY: ●●●

KEY PIECE: The monumental *Millbank Steps* by British artist Anthony Caro is located at the entrance to the park. Comprising four huge, stepped arches that resemble the towering ziggurats of ancient Mesopotamia, it is made from 100 tons of steel and counts among the modernist sculptor's most ambitious works.

WEBSITE: [sculpture.uk.com](http://sculpture.uk.com)



Each of the four arches forming Caro's *Millbank Steps* towers up to more than 17 feet—a colossal height considering that the work was commissioned not for an outdoor space but for the artist's 2004 retrospective at Tate Britain

Copyright New Art Centre, Roche Court Sculpture Park

## STORM KING ART CENTER

NEW YORK, UNITED STATES

Boasting a rather epic title and impressive size (500 acres), Storm King Art Center prides itself on being one of the world's leading sculpture parks. Nestled between rolling hills smothered in heavy, ever-changing foliage, the site is home to a collection of more than 100 large sculptures by artists including Alexander Calder, Andy Goldsworthy, Zhang Huan, Maya Lin, Richard Serra, and Ursula von Rydingsvard. "Since opening to the public in 1960, Storm King's collection has grown to over 100 artworks by some of the most celebrated artists of our time," says John Stern, the park's president. "We seek to foster the deeply entwined forces of nature and art."

The park, located only an hour's drive north of New York City, attracts visitors from all over the world who delight in taking advantage of the park's plentiful photo opportunities. One of the

park's biggest attractions is Menashe Kadishman's *Suspended* (1977), in which two enormous iron blocks protrude, hovering from the earth, creating a sinister but beguiling optical illusion. The curation here is remarkable: artworks have been planted so perfectly that the landscape seems to have grown around them.

"The sheer magnitude of Storm King—both that of its landscape and its collection—sets it apart," says David Collens, the center's director and chief curator. "We spend many months siting artworks, ensuring that sculptures are seamlessly integrated into the rolling hills, fields, and woodland at Storm King. The effect—with monumental and smaller-scale works playing in and around the park's natural features—is dramatic, yet serene, and altogether unique to Storm King."

### SCULPTURE PARK SCALE

SIZE: ●●

ACCESSIBILITY: ●●●●

**KEY PIECE:** The bold steel sculptures of the abstract expressionist sculptor Mark di Suvero and the broad expanses of Storm King seem made for each other. Besides having presented four landmark exhibitions of the American artist's work to date, the park exhibits a number of his spatially dynamic sculptures on a permanent basis.

WEBSITE: [stormking.org](http://stormking.org)

*Mon Père, Mon Père*, by Mark di Suvero, dates from the 1970s and is made entirely of solid steel. The artist used cranes and cherry pickers to assemble the individual parts for the monumental sculpture



Photography by Jerry L. Thompson

## BENESSE ART SITE

NAOSHIMA AND INUJIMA ISLAND, JAPAN

Much like Inhotim, Benesse Art Site Naoshima, in Japan, aims to do much more than simply provide a space for people to view large-scale artworks. Set over a group of island towns—Naoshima and Teshima, in Kagawa Prefecture, and Inujima Island, in Okayama Prefecture—Benesse Art Site pulls together contemporary art, publishing, architecture, and nature into a collective space to provide a state of well-being and relationship with local communities.

The radical plan for this area of Japan to be converted into art islands was formed in 1985 when two men, Tetsuhiko Fukutake (then CEO of Fukutake Publishing Co.) and Chikatsugu Miyake (then incumbent Mayor of Naoshima), met on the island and began planning to transform the area into the Naoshima International Camping Ground, a place where Fukutake imagined children would

travel in order to learn and grow in a beautiful and sustainable environment. Fast-forward a quarter of a century and the area, now called Benesse Corporation, is run by Fukutake's son, Soichiro, and has blossomed into a sprawling landscape of cultural activity focusing just as much on health care and child development as on contemporary art.

Part sculpture park, part museum, and part hotel, Benesse House—which is located on the southern coast of the island of Naoshima—was designed by Tadao Ando and is almost entirely built underground with wide, gaping holes in the ceiling to let natural light fill the subterranean rooms. Here, guests can stay in the hotel and enjoy the exhibits dotted around the landscape and within the museum at their will, 24 hours a day, throughout their stay. ○

### SCULPTURE PARK SCALE

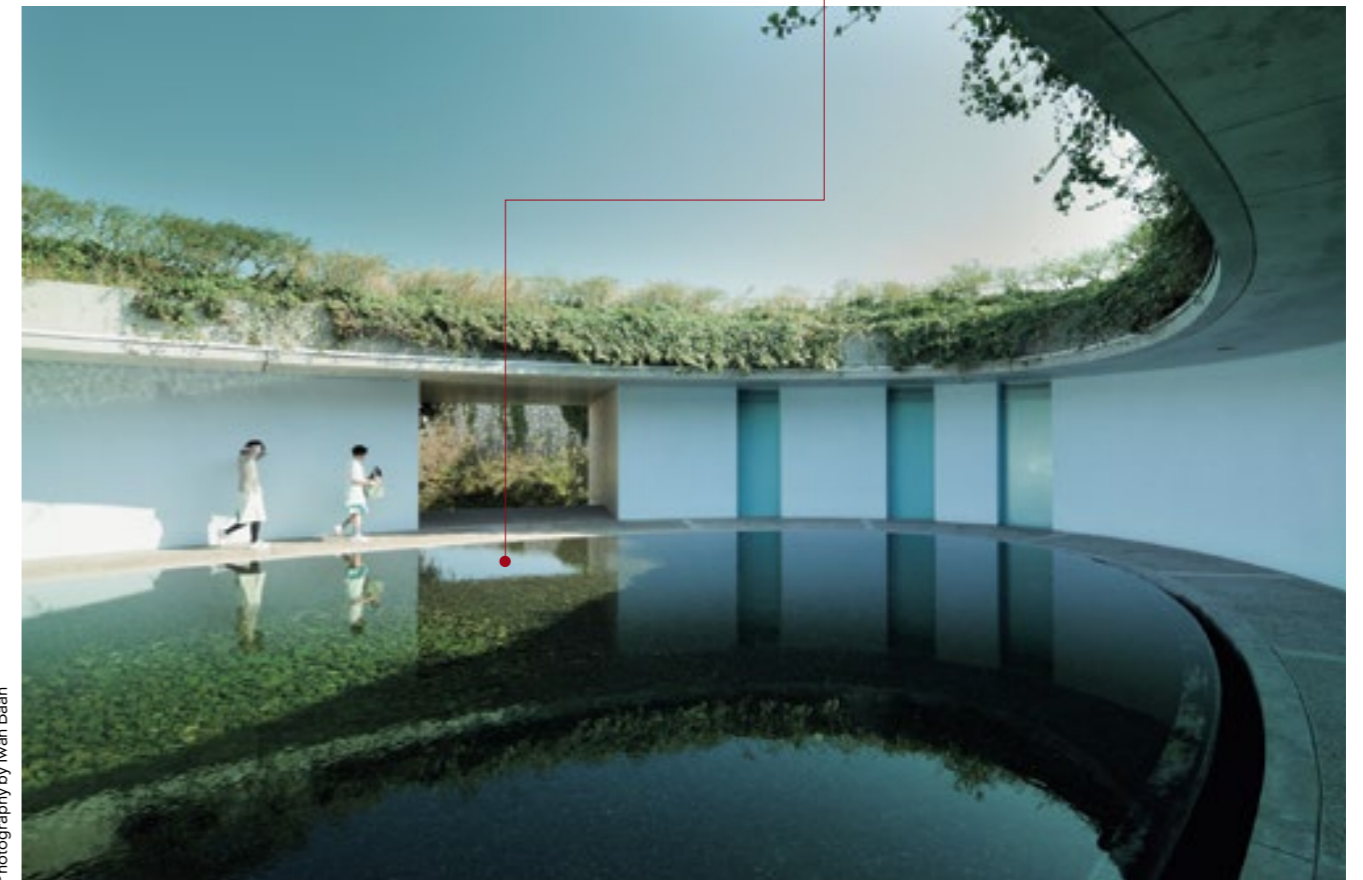
SIZE: ●●●●

ACCESSIBILITY: ●●●●

**KEY PIECE:** Works by Yayoi Kusama, Niki de Saint Phalle, and Karel Appel aside, the major draw here is the vast, meticulously thought-out site itself. From the park over to the hotel blending the indoors and the outdoors, visitors are invited to engage with the interplay between art, nature, and architecture wherever they go.

WEBSITE: [benesse-artsite.jp](http://benesse-artsite.jp)

The Tadao Ando-designed Benesse House Museum opened in 1992 as a facility that married a museum with a hotel, shown here. Art is scattered throughout the building; hotel guests benefit from after-hours visiting privileges



Photography by Iwan Baan

# A L I V E A N D C O O K I N G

While it's easy to be blasé about Melbourne's dominance in global quality-of-life rankings, all it takes is 48 hours on the ground to realize that this city is the real deal. Locals here are spoiled. Brunch spots throughout the city offer outstanding food and coffee. Galleries stage world-class exhibitions. Sports stadiums showcase high-quality tennis, rugby, and football. (A tip: locals will look at you strangely if you don't refer to the national game as "footy.") And restaurants here are so good, they attract diners from around the planet. Not that eating out in Melbourne is all about fine dining. At its heart, the city is home to various bustling food and drink precincts that take in everything from hip cafés to internationally recognized cocktail bars. When you go, pack an appetite—for the food *and* the culture. It will come in handy.

Text by Max Veenhuizen and photography by Derek Henderson





**RISE AND SHINE**  
Melbourne has a well-deserved reputation as one of Australia's most caffeinated cities. The baristas are committed, the beans are microroasted, and coffee subscriptions are an actual thing. In short, you're never too far from a really, really good cup of joe. In Collingwood, for instance, the place to go is Proud Mary. In North Melbourne, it's Twenty & Six Espresso, where the food is equally good. In Prahran, make your caffeine pit stop at Pardon, a cozy hangout from the crew behind the hole-in-the-wall (literally) that is Cup of Truth, in the Flinders Street subway station. Padre Coffee has five locations throughout the city, while St. Ali is one of the cafés taking Melbourne coffee to the world—it recently opened an outpost in Jakarta.



**ST. ALI**

You won't happen across St. Ali by accident. To visitors, it can appear to be a shabby coffee shop in a lane, but informed Melburnians know better. The coffee here is top notch, and inside there's more than enough room to spread out.

12-18 Yarra Place, South Melbourne VIC 3205

↑  
At St. Ali, a guest mixes coffee with work

**TWENTY & SIX ESPRESSO**

Unlike other neighborhoods, North Melbourne isn't awash with great cafés, which makes Twenty & Six Espresso a refuge for locals. The coffee is good here, and so, too, is the food. This is a brunch spot, so note that it closes accordingly.

594 Queensberry Street North Melbourne, VIC 03051



↑  
Sweet potato and pumpkin hash with kale, red quinoa, avocado, feta, and a fried egg

←  
Alex Killerby, a manager at Twenty & Six Espresso, outside the shop

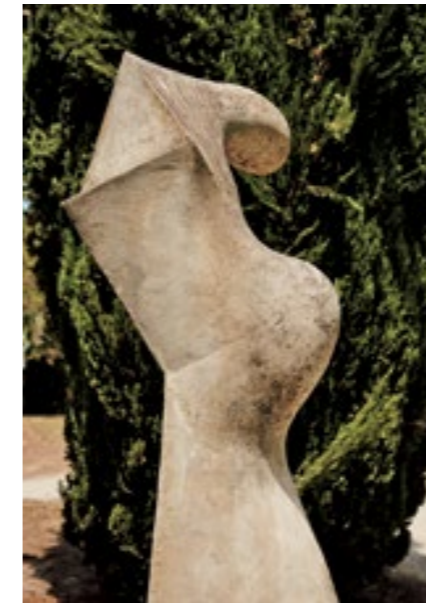


## ACCA

An impressive—and very rusty—piece of modernism on the outskirts of Melbourne's busy Southbank arts precinct, the Australian Centre for Contemporary Art shows work by leading local and international artists, such as the English artist Ryan Gander and the Scottish artist Douglas Gordon. Billed as Australia's only Kunsthalle, the institution commissions work, rather than just collecting it.

111 Sturt Street, Southbank, VIC 3006

One-third of *Stages 1, 2, 3* (1981),  
a sculpture in stone by the Australian  
artist Ronald Upton



## HEIDE MUSEUM OF MODERN ART

Originally the home of art patrons John and Sunday Reed, Heide Museum of Modern Art, 15 kilometers outside Melbourne's city center, displays sculptures all year round in verdant gardens and presents exhibitions in three gallery spaces.

7 Templestowe Road, VIC 3105



The exterior of one of Heide's  
exhibition spaces

## ART AND ABOUT

From graffiti-covered lanes and edgy galleries to mega-institutions hosting some of the biggest names in art and theater, Melbourne is a city rich in culture. The National Gallery of Victoria, for instance, is Australia's oldest art gallery and welcomes more than two million visitors annually. Its robust programming includes everything from Australian car exhibitions to a recent international blockbuster exhibition featuring works by Andy Warhol and Ai Weiwei. Elsewhere in the Southbank arts precinct is the Australian Centre for Contemporary Art, Melbourne's own Kunsthalle, a dynamic space dedicated to modern work. Other major events—the Melbourne International Comedy Festival (March 23 to April 17), the Melbourne International Film Festival (July 28 to August 14)—make Melbourne's cultural calendar worth subscribing to.







### WILLIAM STREET

Offices line much of William Street, in Melbourne's CBD, but the road also hosts the Queen Victoria Market, which at seven hectares is the largest open-air market in the Southern Hemisphere.

William Street, CBD, VIC 3105

### BUSINESS TIME

It's here, in Melbourne's central business district, that this city truly started. That was way back in 1835. Now the area, which includes the streets laid out on the city's formative Hoddle Grid, extending to Queen Victoria Market, is one of Australia's busiest commercial centers, home to six of the country's tallest skyscrapers. Don't be fooled, though—this CBD isn't all about work. The district is dotted with well-kept parks and gardens; its lanes are covered in graffiti, transforming certain back alleys into public art destinations; and the food is delicious here, too. Fine-dining restaurants (try Tipo 00, Embla and Supernormal), brunch spots, and hip cafés cater to corporate nine-to-fivers as well as international visitors, especially on weekends, revealing that this CBD is genuinely livable.



A black Lexus GS-F SPORT turns onto William Street, a major Melbourne thoroughfare

## FOR BITES

Eating is a popular Melburnian pastime, and locals play to win. The competition begins early, with zealots queuing for weekend croissants at Lune Croissanterie, a lab-like space where the pastries take three days to make, and finishes with that last fried chicken order at Le Bon Ton, a late-night absinthe salon. In the market for special-occasion dining? Attica, which has a spot on the 2015 list of the World's 50 Best Restaurants, lives up to its considerable hype, although reservations go in a flash. St Kilda's Café Di Stasio, meanwhile, remains a benchmark for old-school Italian thrills, and Huxtaburger is the go-to place for that popular American dish. As in Paris, Hong Kong, and the other great culinary cities of the world, markets still have a place in cosmopolitan Melbourne. Prahran Market lures shoppers with top-shelf produce, interesting food vendors, and Market Lane, one of Melbourne's leading coffee exponents. Over at South Melbourne Market, the grocers, butchers, and fishmongers share floor space with small businesses specializing in everything from educational children's toys to handmade pet food.

The owner of a market stall at work early in the morning, and local produce for sale at his stall



### SOUTH MELBOURNE MARKET

Queen Victoria Market is bigger, and Prahran Market has the hip coffee shops, but South Melbourne Market has the variety. There's ultrafresh food here, but within the small stalls and shops there's genuine community, too.

Coventry and Cecil Streets  
South Melbourne, VIC 3205



### HUXTABURGER

There are plenty of fine-dining restaurants in Melbourne, but the city's more informal venues also excel, and none more so than this popular burger shop in the rapidly gentrifying neighborhood of Collingwood.

106 Smith Street  
Collingwood, VIC 3066

## OUT OF TOWN

Melbourne's appeal isn't confined to the city limits. An easy 90-minute drive from the city center, the Yarra Valley is an ideal day-trip destination. Above ground, rolling hills and morning blankets of fog make the area a photographer's paradise. Underfoot, the region's fertile soil has sustained generations of farmers and pastoralists. While many continue to live off this land, wine is the Yarra Valley's premier export, as evidenced by its numerous cellar doors. One of the best wineries to stop at is Oakridge, not least because Matt Stone, the environmentally minded young gun, has come on board as chef at its restaurant. While the winery count is a little lower through the Dandenong Ranges, the area boasts some good eating, such as the Piggery Café at Burnham Beeches and Giant Steps in Healesville. After lunch, go for a drive through Black Spur for epic forest landscapes. ☺

**BLACK SPUR**

The hairpins are fun at Black Spur, a 30-kilometer section of the Maroondah Highway that winds dramatically through a rainforest populated by tall Mountain Ash trees.

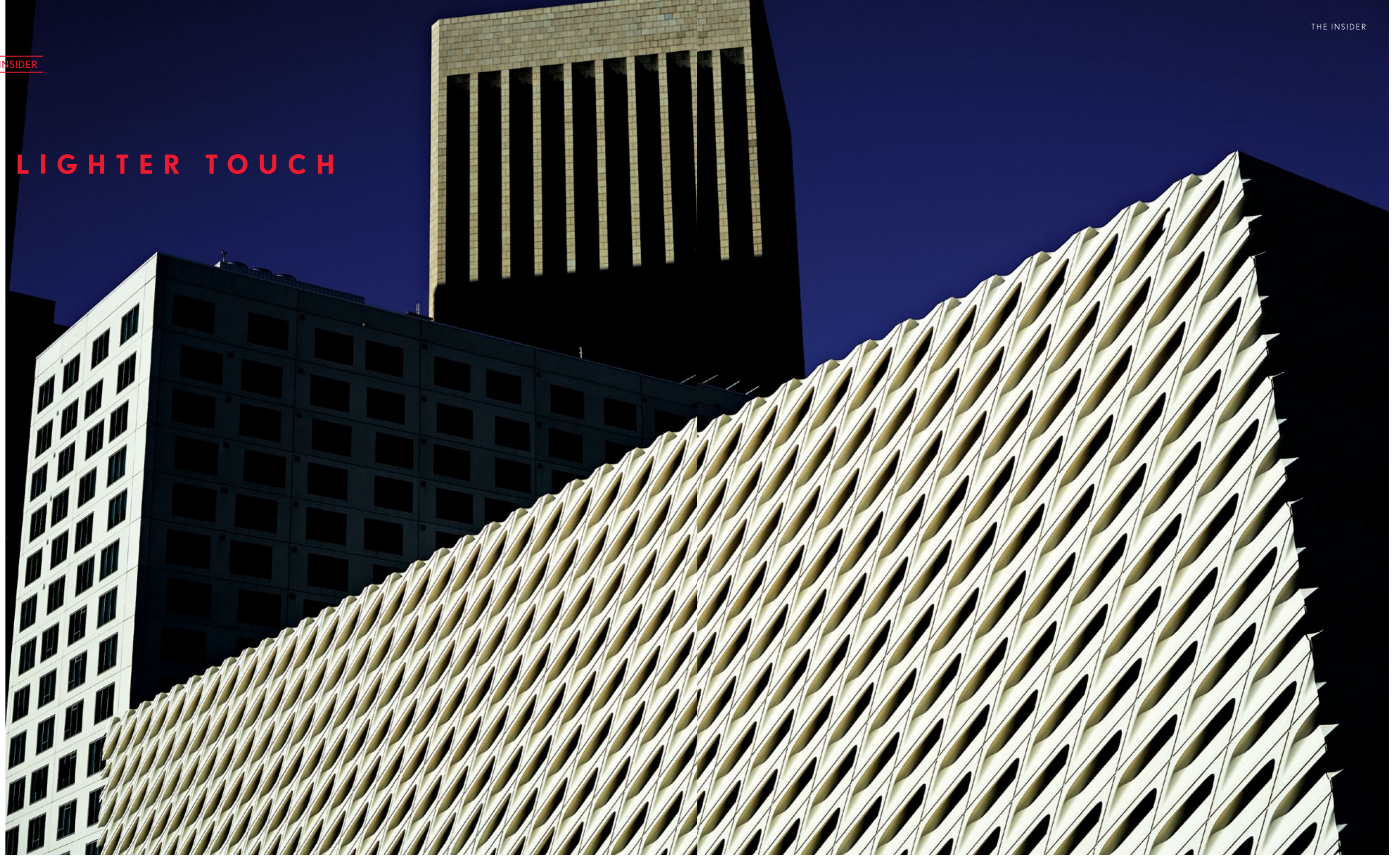
60 km northeast of Melbourne

**LEXUS GS 350 F SPORT**

<b>LENGTH</b>	4,880 mm
<b>HEIGHT</b>	1,455 mm
<b>WIDTH</b>	1,840 mm
<b>WHEELBASE</b>	2,850 mm
<b>SEATING CAPACITY</b>	5
<b>DRIVEN WHEELS</b>	Rear
<b>ENGINE TYPE</b>	Vtype, 24 valve DOHC with Dual VVT-i
<b>CYLINDERS</b>	6
<b>ENGINE OUTPUT</b>	232kW / 6,400rpm
<b>TORQUE</b>	380Nm / 4,800rpm
<b>TRANSMISSION</b>	Automatic with manual mode
<b>SUSPENSION</b>	Fr: Double Wishbone Rr: Multi Link
<b>TIRE</b>	Fr: 235 / 40R19 Rr: 265 / 35R19

Product and specifications may vary by country

## A LIGHTER TOUCH



*Last year, Los Angeles gained a major new cultural destination, The Broad, a contemporary art museum designed in stark contrast to the city's other, more garish institutions. Jonah Weiner takes a peek inside, finding a delicate building that reveals itself in stages*

*Text by Jonah Weiner  
Photography by Adrian Gaut*



The Broad is covered by an off-white latticework that the architects have likened to a veil, which allows it to stand out in downtown Los Angeles

The museum's cavernous underbelly



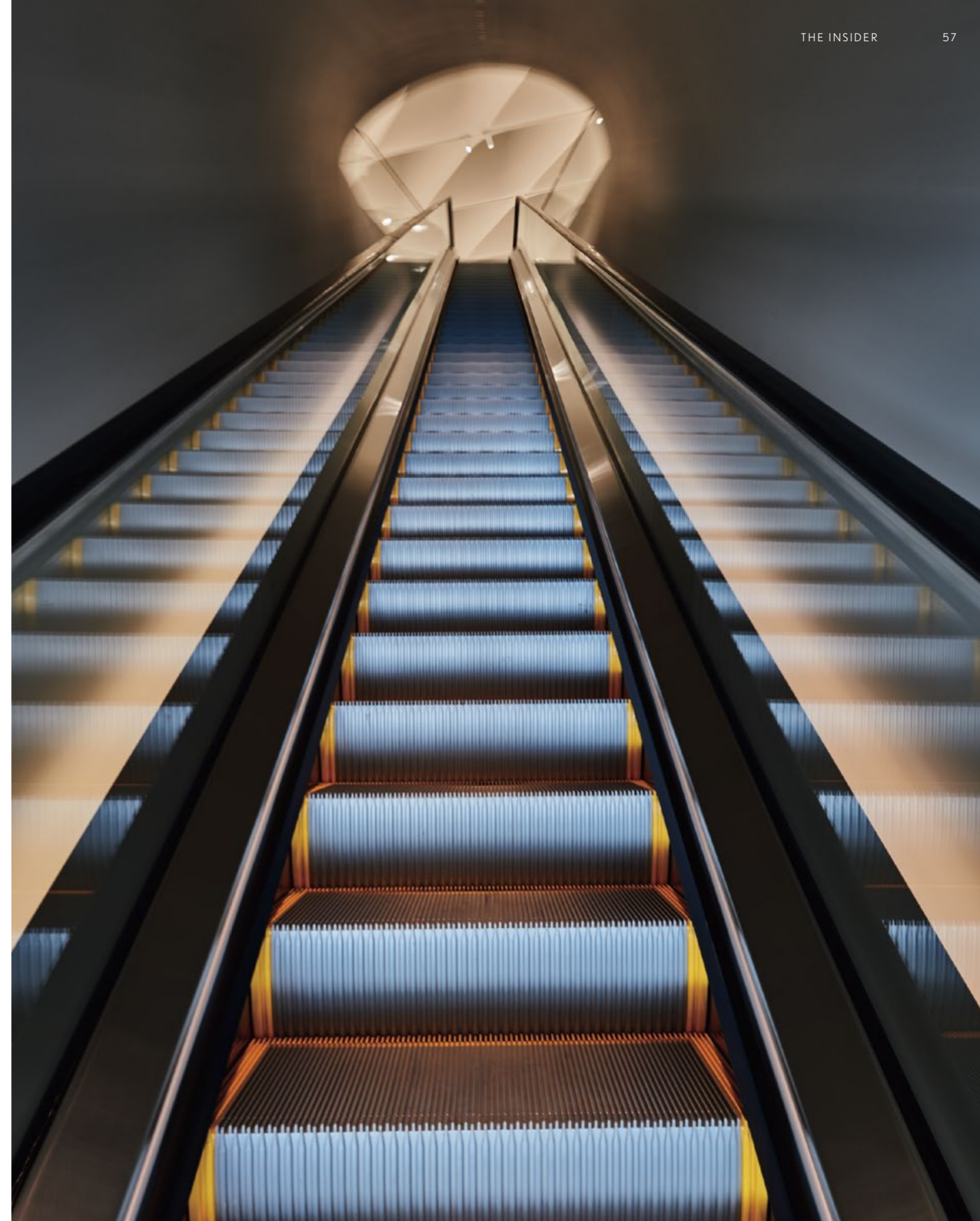
The Broad museum is a tease, by design. A brand-new, \$131.5 million, 11,000-square-meter construction in downtown Los Angeles, the museum sits directly across the street from, and stands in dramatically understated contrast to, the Frank Gehry-designed Walt Disney Concert Hall, a shimmering metal peacock whose

rippling stainless-steel plumage has made it the city's reigning architectural showboat of recent memory. The Broad doesn't even "try to compete" with Gehry's breathtaking ostentation, according to Elizabeth Diller, a founding partner of Diller Scofidio + Renfro, the architectural firm that designed the museum. Instead, the designers opted for a distinctly more coy set of strategies: intrigue, mystery, and flirtation, which begin outside. The Broad is covered by an off-white latticework fashioned from glass-fiber-reinforced concrete, a surprisingly airy, mesh-like membrane that Diller and her partners have likened to a veil, and which allows indirect light to flood the galleries within, offering tan-

talizing glimpses from the street of the interior structure and space. At the Broad's southern and eastern corners, however, this latticework rises upward, almost suggestively, inviting people to come inside. The veil "tempts you from the street," as Diller phrases it, "with its lifted corners."

What visitors are being tempted toward is the 2,000-piece art collection of the billionaire housing developer and philanthropist Eli Broad, which he has amassed with his wife, Edythe, since the 1970s. The Broads are prominent figures on the LA cultural scene—Eli helped lead the fund-raising for the neighboring Disney Hall—but for years the vast majority of their collection sat tucked away in crates in a half-dozen warehouses scattered around town. Key pieces were loaned to institutions around the world, but mostly the art went unseen. "I decided we want the best work to be shown in public," Eli Broad, explaining the museum's genesis, says. "I want it seen by the largest audience possible."

To that end, the Broad museum does not charge admission, although the daily allocation of tickets is limited. (Eli Broad's worth has been estimated at \$7.4 billion, which helps make free admission feasible.) Those with the good fortune to score tickets walk under the veil and arrive in an enormous lobby marked by irregularly curved ceilings, walls, and



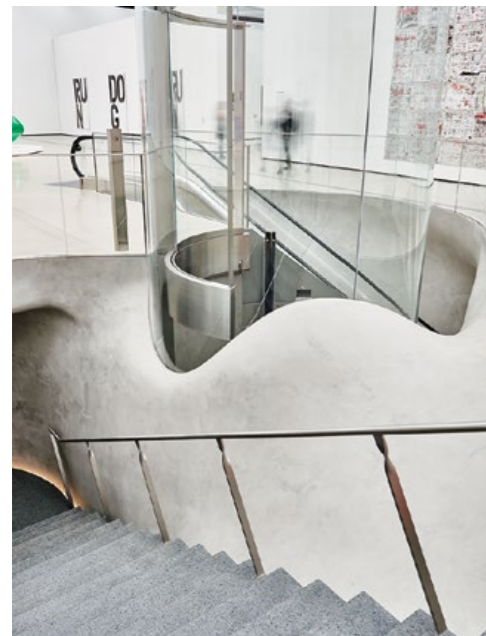
From the ground-floor museum lobby, visitors are presented with only glimpses of the galleries on the building's upper floors. The most obvious trajectory upward is via a narrow escalator that rises three stories to the museum's top floor



↑  
*Ballon Dog (Blue)*, by the American artist Jeff Koons, on view in one of the museum's upper galleries. The building's latticework facade protects the artwork from beams of direct light

The upper galleries are serviced by stairs, an elevator, and an escalator

↓



support beams that combine to suggest a cave or, more fancifully, a brontosaurus's underbelly. Here, the teasing continues: sight lines are obscured, and while a visitor can spy slivers of the first-floor galleries around certain undulating corners, the most obvious trajectory is toward an escalator that rises up three stories, burrowing through a long, narrow tunnel toward a bright light only faintly visible from below. The metaphors here are portentous and playful at the same time. Is this a birth canal? A heavenly ascent?

If the latter, then God turns out to be Jeff Koons, the superstar American artist who is one of the Broad's beloved deities, and whose monumental sculpture *Tulips* juts out toward visitors with an aggressive whimsy at the top of the escalator. Seventeen feet long and six and a half feet high, *Tulips* is a gleaming bouquet of six flowers, rendered in mirror-polished stainless steel with bright color coatings. In the current configuration, it is the centerpiece of the Broad's vast, main exhibition space, on its top floor. To a large degree, though, the exhibition space constitutes

its own centerpiece. Overhead hangs the veil, which consists of 318 slanted skylights, their apertures remote controllable. The effect is a subtle, diffuse luminousness that reflects Eli Broad's insistence, affirmed by the museum's director, Joanne Heyler, that no beams of direct light will ever penetrate the room and touch the (extremely sensitive, extremely costly) art. Customizability is a running theme in the architecture here: flanking *Tulips* are two of the museum's many movable partitions, which shift to create individual galleries, reconfigurable according to any given exhibition's demands. "We have complete flexibility up there," Heyler says.

The Broad Collection's focus is on contemporary art, with an all-star, blue-chip lineup. If one word had to be chosen to describe both the represented artists' stature and the prevailing aesthetic, it would be *huge*:

surrounding Koons's steroidal tulips are nine tall stenciled placards by Christopher Wool; some 20 feet away are massive panoramas by the photographer Andreas Gursky; mounted nearby is *Chlorpropamide (pfs)*, an epic dot painting, made by Damien Hirst in 1996. There is a beautifully imperfect metal tapestry by El Anatsui here, a typically screaming Barbara Kruger print there. In at least one case, the art was too big for the building itself: an 82-foot-long painting by Takashi Murakami, obtained after the museum's design was finalized, was too large to fit on any single wall. (After securing permission from Murakami, the Broad staff hung it on two perpendicular walls.)

**"THE BROAD WILL REALLY HELP CEMENT LOS ANGELES AS A CULTURAL CAPITAL OF THE WORLD, TOGETHER WITH NEW YORK, LONDON, AND PARIS"**

Numerous Warhols and Lichtensteins are on hand—unsurprising for a collection that, according to Heyler, "has its heart in pop art." All the same, amid the parade of art-world titans, there are notes that complicate any air of triumphalism. There is a bracing gallery devoted to Kara Walker's grotesque silhouettes meditating on slavery; nearby is a hallucinatory, enveloping, and poignant 1983 painting titled *Infinite Expansion*, by Mike Kelley, who killed himself in 2012. William Kentridge's rough-hewn animations, which reckon obliquely with apartheid-era South Africa, are grim wonders to

behold. "I like the idea that a museum in the complex world that we live in is filled with many types of art," Heyler notes. "One important part is artists who still feel strongly that painful, difficult things in our social condition today need to be addressed."

The museum's final tease comes as visitors take a dark staircase to the ground-level galleries, which will host a rotating program of shows. (A Cindy Sherman retrospective has been announced for the future.) On two landings during the descent, windows afford views into what Diller and her fellow architects call "the vault." The belly of the building turns out to be a vast repository for the collection itself, consolidated from those half-dozen warehouses into the very building visitors stand in. These views are partial, suggesting further enormities just around the bend. They also give a fascinating nuts-and-bolts sense of how the Broad's operations work—paintings hang on motorized racks, and they can be dialed up by computer as needed. Think of a motorized necktie rack, only for multimillion-dollar canvases by George Condo and Mark Bradford.

Eli Broad's hopes for what his namesake museum can achieve extend well beyond the walls of its formidable vault, out into the city, and from there to the world stage: "I think it will really help

cement Los Angeles as a cultural capital of the world, together with New York, London, and Paris," he says. "Those cities get 10 to 15 million tourists a year, which is a big boost to their economy. We only get about five million, but I think that's beginning to change." His ambitions are, like his taste in art, monumental. ☉



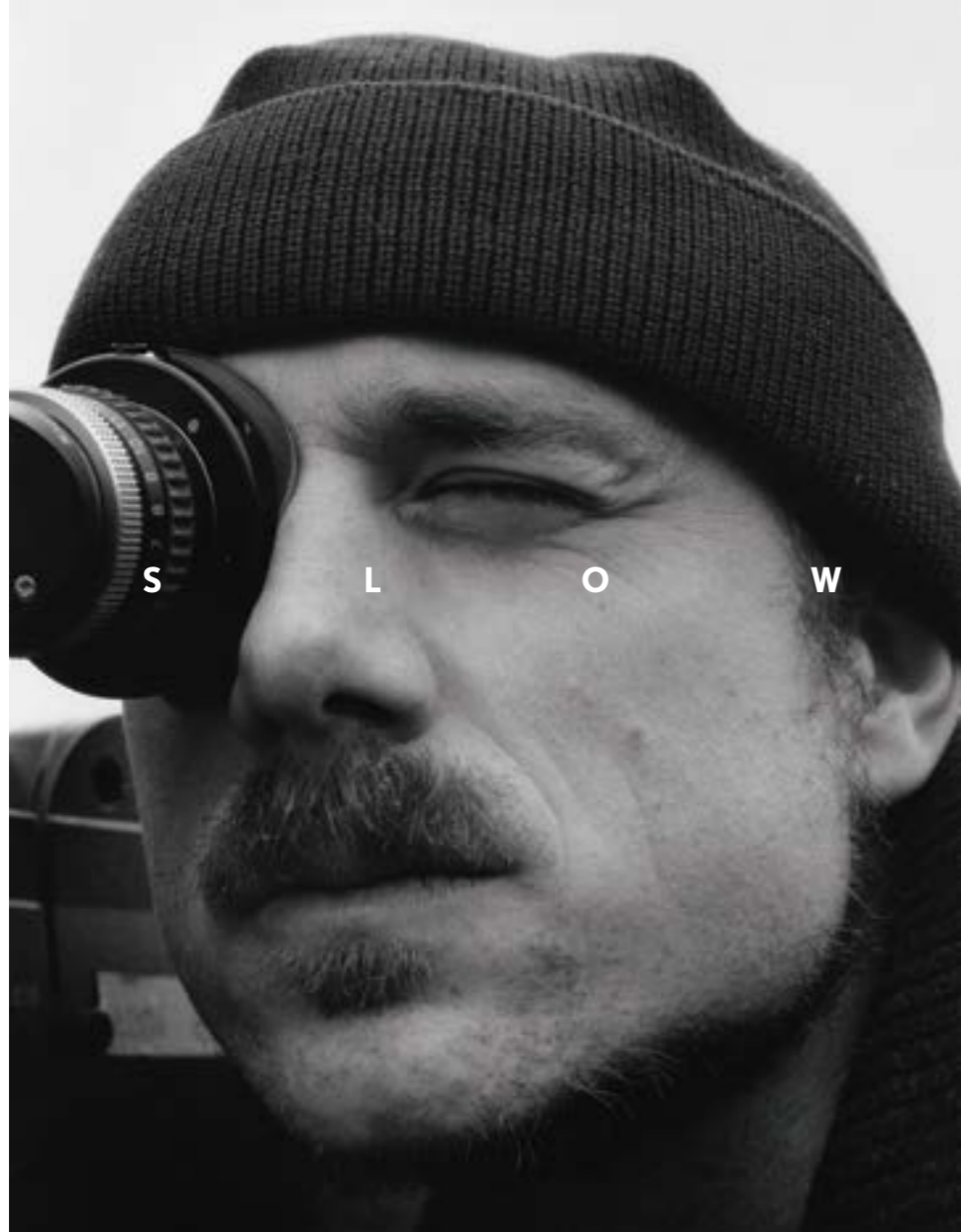
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*Blue Curve II*, a painting by the American artist Ellsworth Kelly, hangs on a motorized rack in the museum's archive

More paintings, including a work by the American pop artist Keith Haring, hang in what the Broad's architects call "the vault"

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THE SLOW GO



Text by Alex Moshakis and photography by Jamie Hawkesworth





Mountains that overlook the Leitzach valley, in southern Germany, are framed between layers of dense ground-level fog and thick cloud. Wildlife cameraman Rolf Steinmann moved to the area, in Bavaria, last August from his home in Munich

*When the award-winning wildlife cameraman Rolf Steinmann moved to Bavaria last year, he immediately decided to make a film about the area—but he’s taking his time. We join him on the hunt*

On a cold morning in February, Rolf Steinmann drove to the base of Wendelstein Mountain, a 1,800-meter-tall pile in the Bavarian Alps, in southern Germany, stepped into a cable car, and hoped for the best. Wendelstein is the largest mountain in the area, and because its peak is exposed and higher than those around it, it is popular among tourists for its panoramic views. On a good day, when the weather is clear, visitors can see past high-altitude ski slopes, sheer limestone cliffs, dense Alpine forest, and silty foothills, all the way to the valley floor below, which in the winter is green and brown and pockmarked with heaps of snow. They can also see animals, but only if they are lucky: chamois, perhaps, small, shy, goatlike antelope; or, rarer still, mountain hare, which in the winter are white and nearly impossible to spot in the snow. Steinmann, an Emmy Award-nominated wildlife cameraman who films animals around the world for big-budget broadcasters such as the BBC, was looking for the antelope. But, if he were being honest, he’d take anything he could get.

Steinmann has been filming in and around the Leitzach valley on and off since August 2015, when he moved here from Munich, the city in which he was born. On average, he spends eight months of the year on commercial jobs elsewhere. The other four are spent at home in Germany, in what he calls “a state of re-acclimatization.” The footage he has been capturing in Bavaria—rolls shot in the mountains and pastures that surround his home—will eventually form a new short documentary that he is making about the region, which he hopes will communicate its atmosphere through “its animals, its landscapes, and its people.”

Steinmann has made a career out of traveling to extreme locations to capture incredibly specific acts of animal behavior, but those trips are often quick and highly pressurized. (One example: he was

recently given eight weeks in Tibet to film, among other events, a Tibetan antelope giving birth, which is very rarely caught on tape.) For his film about Bavaria, Steinmann is opting to take his time, eschewing script and schedule, allowing narratives to unfold naturally—a rare and idiosyncratic approach that, in both attitude and method, makes him a progressive outlier among his peers. The process is at least in part a rebuke of the commercial wildlife film industry, which he feels is placing too much emphasis on quickly made, larger, and falsely spectacular productions, and not enough on the depth required to affect an increasingly savvy modern audience. “I think that’s what we’re missing in television right now,” Steinmann says, referring to the kind of work in which it is obvious that a filmmaker has immersed himself in a place and its culture, thereby

allowing him to share valuable knowledge with viewers. “What is so important is time. Over long periods of time, you just *connect*.”

In order to achieve any degree of authenticity, Steinmann believes, his project will take at least three years to complete, during which time he will accrue footage whenever he can and compile, rather laboriously, a final cut in the editing suite. For that reason, he is not overly picky about what he films, or when, or even from where. When at home in Germany, he hikes daily, often for six or seven hours straight and regularly without food, on the lookout for scenes that he believes will represent the region in some way. Sometimes he films during a backcountry trek; the next day he’ll notice something from his car. There are days when he does not feel the need to record anything at all,



Almost every day, Steinmann spends up to seven hours on hikes through the Leitzach valley, on the hunt for shots





Steinmann sets off on a hike into the Leitzach valley. His bag, which he carries on every hike and contains a 16-millimeter camera, tripod, battery pack, and various lenses, weighs around 25 pounds

although they are uncommon. Roe deer grazing on a snowy pasture: incredible. Foxes gallivanting across muddy banks: perfect. A slow-moving brook catching the last light of a dying day: film it, let's see.

When the cable car reached the top of the mountain, Steinmann's primary objective shifted. Rather than searching for chamois, he began to film the landscape, panning carefully from east to west. A layer of fog had submerged the valley, obscuring from view anything more than a few hundred meters below, and cloud had descended overhead, capturing Wendelstein's peak in a sandwich of mist from which only the crowns of nearby mountains emerged. Cable car staff had told him that this particular kind of weather was extremely rare—one man, who looked to be about 30 years old, had seen it “perhaps two or three times in my life”—so for Steinmann the opportunity was too important, and previously underwitnessed, to pass up. For more than 40 minutes, he filmed from a lookout point, documenting the view in all directions, so the footage could be used in a final edit. The chamois would have to wait.

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As a child, Steinmann, who is 35 years old, had no particular ambition to be a cameraman. His interest in nature developed as a teenager, when his mother gave him a coffee-table book about Alaska that in-

stilled in him a desire to experience the wilderness. “I wanted to live in a cabin,” Steinmann says. “That was my dream. I wanted to get away from civilization.” As a 17-year-old, he jumped at the chance to take part in a school exchange to Norway. The following summer he went back to cycle through the country. And then, as an 18-year-old, he spent six months cycling from his doorstep to the North Cape, in Norway, and back, solo, his clothing stored in a black trash bag on his back. While on that trip, he encountered foxes, and later a lynx; on a subsequent journey, he was for several days accompanied by a reindeer—all “amazing experiences.” Steinmann describes this period of travel as amounting to a personal and professional turning point. In Scandinavia, what was once a desire to broadly experience the wilderness developed into a fascination with the animals that lived within it. On his next trip, he ditched his bike and walked, focusing less on seeking grand vistas and more on creating scenarios in which he could share intimate moments with local wildlife. Every time he returned to Munich, he would turn on the television and watch nature documentaries, but films made by other people could satisfy his appetite for adventure for only so long.

The idea of actually filming what he saw came later, as a by-product of his trips. Steinmann never trained formally as a cameraman. Unlike many of his contemporaries, he decided against studying film,

preferring instead to learn from older professionals on location. In his early twenties, he assisted experienced filmmakers while developing his own techniques and processes. Soon he was commissioned by producers working for German television and, later, for the BBC, Discovery, and Disney. The jobs offered validation—and put food on the table—but they were still work. The act of being in the wilderness has always come first. “For me it was always about escapism,” Steinmann says. To be “away from people, in nature. That was a very strong longing.”

Steinmann has since filmed a variety of animals in a variety of locations. He has worked with several different kinds of wolf, bear, and antelope. He has filmed coyotes in the United States, wild dogs in India, baboons in Zimbabwe, ibex in Israel, bonobos in Congo, flamingos in Mexico, and crested black macaques—“a very cool monkey,” he says—in Asia. He has traveled by boat to Funk Island, a remote, perilously rocky outcrop in the Atlantic, to film the ocean's largest colony of guillemots; and to Sri Lanka to film the world's largest leopards. For six weeks last year, he filmed musk oxen in the Arctic Circle to create a personal work titled *In Between*, an elegiac seven-minute short that bemoans the effects of global warming. And between 2009 and 2010, he spent several months in Patagonia filming mountain lions, an experience he describes, rather more drolly than you might expect, as being “fairly intense.”



Chamois are notoriously shy. Here, two climb a ridge on the Wendelstein Mountain



Much of the Bavarian landscape that Steinmann hikes through, like this snow-covered gully, is remote and difficult to access, and he is regularly alone for long stretches of time. When he returns to town, he visits the homes of local farmers, like those shown below, to learn more about the area and its culture

was not alone. The previous day, Steinmann had met Hans Ziegler, a 79-year-old hunter who has dedicated the past 60 years of his life to the region's conservation. Ziegler had agreed to take Steinmann to points on the mountain at which it is often possible to observe antelope from close quarters, and soon the pair were wading through soft, knee-deep snow. For the next five hours, Ziegler—stick in his hand, hat on his head, no gloves despite the cold—described in detail inconspicuous elements of the surroundings, stopping every so often to identify a trail. The pair discovered chamois, which are usually difficult to spot, at three separate locations. Steinmann got his shots.

Because he is still relatively new to the area, Steinmann is reliant on locals such as Ziegler for information, much like he is on producers and guides for his commercial jobs. When the pair first met, at Ziegler's home, they discussed at length the habits of animals in the region and specific places in which Steinmann might be able to capture them on film. Before long, Ziegler had begun to share a great archive of animal ephemera: eggshells,

Steinmann's commercial commissions continue to take him to faraway places, but he now recognizes that those locations are becoming easier to reach and thus feel less and less exotic. On various drives through the Leitzach valley, he shared an observation repeatedly to illustrate this point. "Say you are in the Arctic, filming polar bears," he said. "What do you see when you turn around? Twenty other people photographing exactly the same thing, right there next to you." As far as Steinmann is aware, he is the only wildlife cameraman making such an in-depth film about the Leitzach valley (or any other quiet, picturesque Bavarian valley, for that matter). Rather than

working in what is generally considered to be the wild, he is turning his lens on what we believe to be familiar, taking the time to reveal that which has been under our noses all along. No need to travel to the Arctic when you have unclaimed territory right there on your doorstep, Steinmann says. Bavaria is the new frontier. You can be a pioneer at home, too.

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Later that February morning, Steinmann began his search for chamois, launching a hike from the Wendelstein summit into the snowy backcountry. He



Steinmann ploughs through snowy conditions, on the hunt for footage. On a hike, it is rare that he will eat anything, preferring to use the space in his bag for equipment



Steinmann pauses on a journey to film a small dam that a single beaver made across a slow-running valley stream

feathers, mammal teeth, dried feces, all plucked from valley floors and mountain slopes and now stored tidily in cardboard boxes. The conversation ran a full two hours, and Steinmann appeared delighted throughout it. He later referred to Ziegler as a “human encyclopedia” and vowed to spend as much time with him as possible.

But Ziegler is not Steinmann’s only source. In the three days I spent with Steinmann, he met hikers, hunters, and local dairy farmers, all of whom shared with him valuable information about the land and, on at least three occasions, invited him into their homes. In the seven months Steinmann has lived in the area, he has come to realize that a documentary about it will be nothing without a record of its people—Bavarians who know and love the region, and who are as much a

contributing part of the environment as the animals that also call the place home—and that only time will afford him the opportunity to delve deeply into their lives. He has plans to film Ziegler and the farmers he has met; at one point on our trip, he filmed a local schoolgirl whose hair had been tied into decorative knots in the Bavarian tradition. This focus indicates a shift in Steinmann’s approach as a cameraman—heveryrarelydocumentspeople. But it also represents a wider change in his perception of the relationship between humanity and the environment. The great wildlife films are no longer just about animals, he says: they are about us, too.

At one point on the Wendelstein summit, a group of German schoolchildren in fluorescent alpine gear exited the cable car and suddenly filled the icy air with

whoops and hollers. Steinmann immediately trained his camera on the group, believing the moment to be typical of local life. “This is the real situation,” Steinmann said, placing significant emphasis on the word *real*. The children moved together to the lookout point at which Steinmann had earlier been filming, but they seemed quickly bored, and many descended the steps within a minute or two. Most were less interested in the vistas than the ice that had formed in frozen drips from the summit’s barriers, which they proceeded to eradicate with gloved hands.

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The next morning, Steinmann drove through the Leitzach valley, winding past dairy farms and ornate wooden homes,



Evidence of beaver activity throughout the Leitzach valley. While filming, Steinmann is on constant alert for signs of animal activity. When hiking past forest, he is in the habit of pointing out trees and branches that have been gnawed at by beavers living nearby. (Wood shavings in small heaps are a big giveaway.) Although Steinmann has filmed some of the most dangerous and exotic animals in the world, he is thrilled to spend time with any animal, whether it’s a beaver in the water or a chamois up on the Alpine slopes



In the valley, Steinmann films a local girl whose hair is knotted into a traditional Bavarian style. Steinmann is a wildlife cameraman, but while making a film about the Bavarian valley in which he now lives, he has realized that its people are as important as its animals



Lights turn on in the small town of Bayrischzell as the sun sets



vast green-and-white fields and thick, dark forests. He was acting on a tip. A hiker had notified him of beaver activity—the gnawed edges of trees, a large collection of twigs and mud assembled into a dam, telltale signs, both—and pointed him toward the banks of two small, slow-moving streams. Steinmann wanted to have a look.

Steinmann has filmed some of the world's most exotic animals, but that day, in thick fog and considerable cold, it seemed as though nothing would excite him more than encountering a semiaquatic rodent, especially with the pressure off. "Nature has to deliver for you to deliver," Steinmann says of exploits out in the field. And, even then, "that doesn't mean that *you* actually deliver—framing has to be right, panning, light. It's so stressful." For inspiration, Steinmann regularly looks to documentary filmmakers from the 1980s and 1990s who often spent years focusing on a species and its environment, amassing considerable knowledge and generating output with genuine depth. These works—by filmmakers like Owen Newman, who has spent much of a revered career documenting East Africa; and Ernst Arendt and Hans Schweiger, a German duo who, from the late 1970s onward, have made more than 50 films—not only depict specific animal behaviors but place them in a broader environmental context, often very gradually. Steinmann considers himself to be a continuation of that lineage, though he doesn't have to travel to reach the locations he is exploring, because he lives within them.

When he reached the streams, Steinmann immediately identified signs of the beaver, and soon he was at the dam. He removed his camera from his backpack, set it up on a tripod, pointed it at the water, and started to film. Little of note was happening. There was no beaver (the rodent is mostly nocturnal), no significant display of animal behavior, no overdramatized moment to satisfy an audience that is increasingly difficult to impress. Beyond the dam was a grassy plain much like others in the area; Wendelstein Mountain loomed in the distance, its peak veiled by cloud. The view was typically Bavarian, but Steinmann could also have been over the border, in Austria, or in Scandinavia, or in the Canadian Rockies. Still, Steinmann, who has filmed some of world's most exotic and dangerous animals in some of its most remote and awe-inspiring locations, appeared utterly obsessed, his right eye pressed firmly against the viewfinder. "I'll just film it," he said. "And then let's see." ☺

Around a bend on a valley hairpin. Steinmann returns home after a day in the mountains



Photography by Laurent Burst



#### IN THE VALLEY

Steinmann drives a white Lexus CT through a pasture in the Leitzach valley, which in the winter is pockmarked with snow. Although the cameraman often hikes to find scenarios to film, he regularly spots scenes while driving, leading him to stop and remove his equipment from the trunk.

Photography by Laurent Burst

<b>LEXUS CT 200h F SPORT</b>	<b>LENGTH</b>	4,350 mm	<b>CYLINDERS</b>	4
	<b>HEIGHT</b>	1,445 mm	<b>TOTAL MAX OUTPUT</b>	100kW
	<b>WIDTH</b>	1,765 mm	<b>TORQUE</b>	142Nm / 2,800-4,400rpm
	<b>WHEELBASE</b>	2,600 mm	<b>TRANSMISSION</b>	CVT
	<b>SEATING CAPACITY</b>	5	<b>SUSPENSION</b>	Fr: MacPherson Struts
	<b>DRIVEN WHEELS</b>	Front-Wheel Drive		Rr: Double Wishbone
	<b>ENGINE TYPE</b>	2ZR-FXE	<b>TIRE</b>	195 / 65 R15

Product and specifications may vary by country

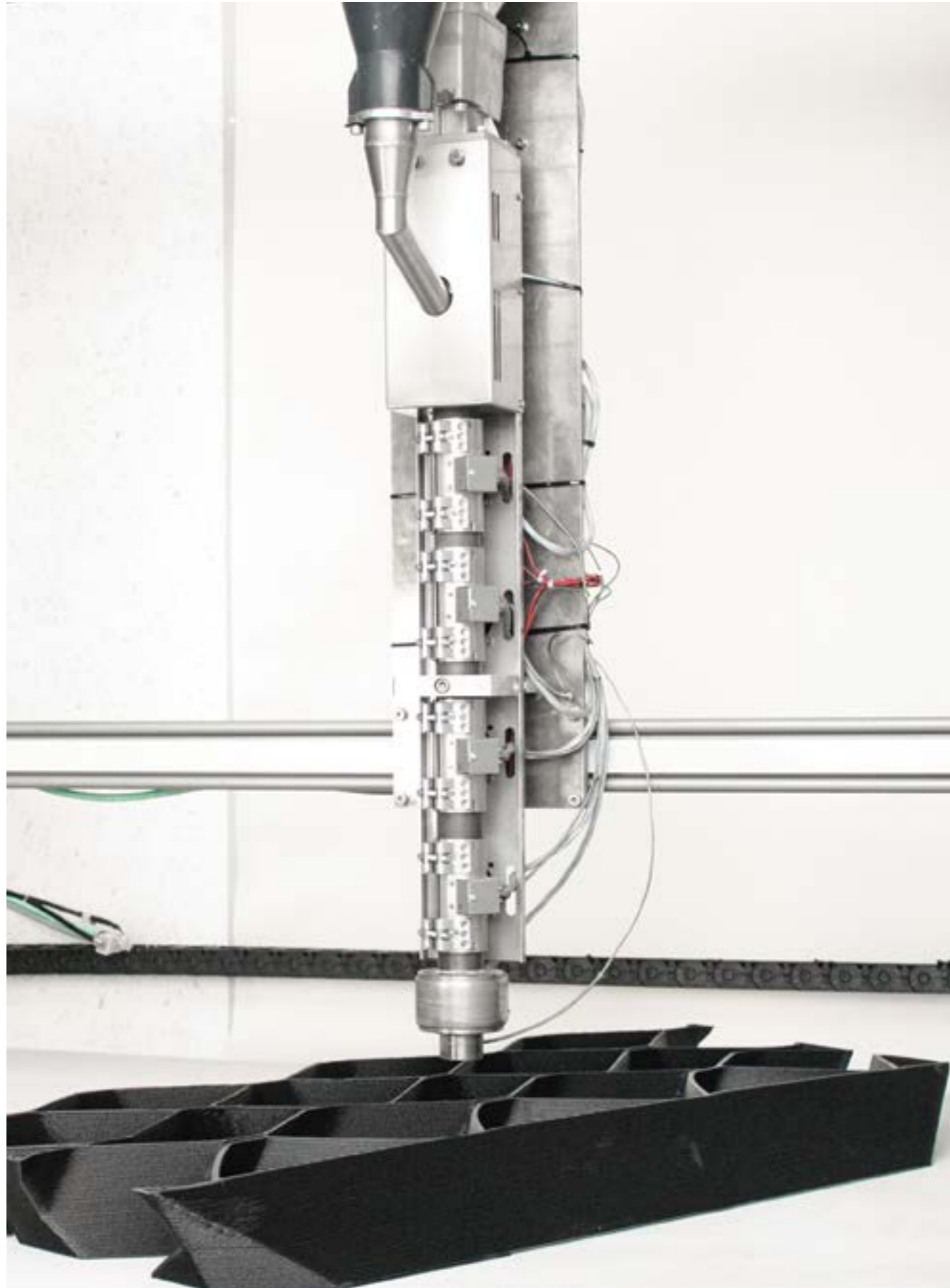


Photo courtesy of DUS Architects

## PRINT ON DEMAND

Text by Tom Lamont

*The 3-D printing industry is developing at a frenetic pace, with companies around the world creating everything from prosthetic hands to Mars landers. We report on three companies pushing the boundaries*



The large-scale 3-D printer used by Dutch architecture practice DUS to create parts of the 3D Print Canal House

Inside the Shah Lab at Northwestern University, in Chicago, where research into the 3-D printing of replica human bones is ongoing, a dozen plastic trinkets have been set out on the lip of a window-pane. There's an inch-high snowman, a garish orange pumpkin, a Thanksgiving turkey—all of these made by staff on the lab's 3-D printer to celebrate recent holidays. (The miniature dinosaur, the budding flower, and the ideally geometric Egyptian pyramid were gifts they gave each other on birthdays.) The Shah Lab is a serious-minded research facility. Pioneering work is conducted here in a specialized field where 3-D printing meets bioengineering. But still: the lab workers have everyday access to a cool machine that can 3-D print supremely precise objects. Of course they're going to make toys once in a while.

Something about 3-D printing—which after all is a convoluted and difficult-to-summarize sort of technology, broadly speaking a way of manufacturing solid 3-D objects in printer-like machines—lends itself to silliness. Three-dimensional printers of all shapes and sizes, using all manner of materials, or “inks,” have been used in recent times to make garden furniture, guitars, bikinis, and biscuits. In Chicago, Professor Ramille Shah, a scientist in her late thirties for whom the Shah Lab is named, acknowledges in her own research work a liking for Play-Doh—they go through tubs and tubs of the brightly colored children's stuff here, its gummy texture apparently just right for prototyping.

Make no mistake, however, that 3-D printing is a serious and seriously thrilling technology, one in which advancements are currently being made at a brisk clip, with potential applications in almost every sphere of the human experience. An Internet-based charity is using the process to create hundreds of prosthetic hands for those in need. At a museum in New York, invaluable historic artifacts are replicated using 3-D printers in case of loss or catastrophe. Modern Boeings and modern Mars landers are

partially 3-D printed. Dental braces, even titanium dental implants, are often entirely 3-D printed. At Professor Shah's lab in Chicago, workers are trying something really adventurous.

Shah leads a tour of her cluttered two-room space, on the 10th floor of Northwestern, pointing out a gel-mixing station for creating the special viscous “inks” they work with, and then a small display cabinet full of interesting prototypes that have emerged from the Shah Lab in the five years since its founding. The tour ends at the 3-D printer itself—a table-mounted piece of equipment that cost Shah a quarter of a million dollars in 2011. It's about the size of one of those carry-on suitcases, with a thick robot arm hovering over a flat platform, which makes it resemble something like a Magimix. With this piece of gear, Shah says, she and her team have been printing what they refer to as “bone scaffolds.”

→  
A small display cabinet showcases interesting prototypes that have emerged from the Shah Lab in Chicago



Photography by Jesse Chehak





**AN INTERNET-BASED CHARITY IS USING 3-D PRINTING TO CREATE HUNDREDS OF PROSTHETIC HANDS FOR THOSE IN NEED. AT A MUSEUM IN NEW YORK, INVALUABLE HISTORIC ARTIFACTS ARE REPLICATED USING 3-D PRINTERS IN CASE OF LOSS OR CATASTROPHE**

Modern medicine of course has enabled patients in need of a new jaw, or a new knee, or a new hip to receive one—a replica made of titanium or ceramic, most likely. The idea is that Shah's 3-D-printed scaffolds would be used instead. She likes to imagine that such a patient would then have something in common with the salamander, an amphibian that can regrow lost limbs. The patients, too, would be able to regrow their own body parts, "regenerate bone."

Professor Shah's husband, Nirav Shah, an orthopedic surgeon at Northwestern's attached hospital, arrives in the lab just in time to explain

why his wife's work is so exciting from a clinical perspective. He first met her at high school; they now have a five-year-old daughter who gets a real kick, apparently, out of the 3-D-printed Play-Doh prototypes her mother brings home. Dr. Shah says that he, too, is eager for products from his wife's lab to make their way into his hands.

He explains. As a surgeon specializing in sports injuries, he has conducted numerous operations in which replacement body parts made of ceramic or titanium or even borrowings from deceased donor bodies have been put inside patients. This is far from an ideal process. Such parts can be expensive

With infinite patience, Shah, a petite American of Filipino heritage whose default mode of expression is to smile, explains that bone scaffolds are lightweight and porous replicas of human bones, partly made up of polymer (a basic binding ingredient of most 3-D-printed objects) and partly made up of a substance called hydroxyapatite, which is the main mineral component of human bone tissue. Shah and her team 3-D print and study these scaffolds because it is their expectation that, once implanted inside a patient, the hydroxyapatite-saturated replicas will transform, over time, into real human bone.

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Professor Shah and a member of her team observe the lab's 3-D printer at work. The pink material is Play-Doh, which Shah's team uses for prototyping



and hard to come by. "There's a supply issue," says Dr. Shah. In the OR, moreover, surgeons like him find that a new ceramic jaw or a new titanium hip has no bend—no give. This can make the parts awkward to install, and once they're installed, hunks of metal or clay exist in patients indefinitely.

Professor Shah's 3-D-printed bone scaffolds, should they receive federal approval, would solve all of these problems. The scaffolds would be cheaply and easily manufactured, down the line, by any hospital that equipped itself with a 3-D printer and the right polymer/hydroxyapatite "ink." Moreover, the scaffolds are very light. One, the shape of a human lower jaw, kept in the lab's prototype cabinet, weighs about as much as a champagne cork. It's squeezy—bendable. Inside a patient, degenerating over time and being replaced by real bone, it would leave behind no hunks of metal. No hunks of clay.

Photography by Jesse Chehak



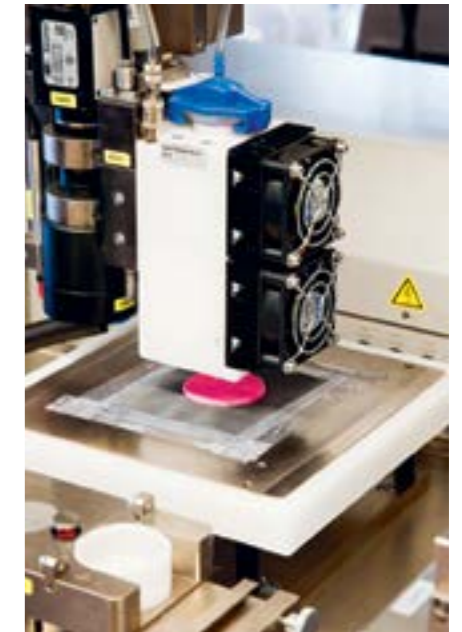
The 3-D printer at work with some bright pink Play-Doh. Most prototypes are made from polymer composites

"I must have talked to a 100 colleagues about this," says Dr. Shah. "They all wanted this now."

How long will they have to wait, realistically? How far away is this technology from coming into general use? It's a question often asked of those like Professor Shah, the specialists and enthusiasts around the world who are making pioneering strides in all directions across the multidisciplinary field of 3-D printing. Tangible breakthroughs feel close. But when? Dr. Shah glances at his wife, impatient to know the answer himself.

"Inside five years?" Professor Shah suggests carefully.

Their work in the lab is going very well, she insists. It's slow but steady. Recent animal tests using her 3-D-printed scaffolds were very, very encouraging. Think of it this way, she says: "This isn't sci-fi stuff anymore. It's just sci."



This technology first emerged in the 1980s. A universal notion—to be able to create 3-D objects without undue cost, manpower, or restrictions in design, as simply and conveniently as one might expect to print images and text on a piece of paper—was pursued in a variety of different ways, using a variety of different machines. In a fine book-length study of 3-D printing, *Fabricated: The New World of 3D Printing* (2013), academics Hod Lipson and Melba Kurman explain how early pioneers in the field birthed two distinct "families" of 3-D printers. "Printers that squirt, squeeze or spray" and "printers that fuse, bind or glue."

This rough distinction holds 30 years later. The bone-replicating printer in the Shah Lab, for instance, is one that "squirts"—in this case, what's squirted is a thin layer of the special polymer/hydroxyapatite mix that emerges through the printer's nozzle in gluey liquid form, quickly hardens, and then supports another thin layer on top. Another comes, then another, until a tangible object forms. The other "family" of 3-D printers operates slightly differently, generally through a process known as laser sintering. In laser sintering, a laser moves along a powdered polymer or perhaps a powdered metal, fusing and hardening layer after layer, and, much



like the squirry 3-D printers, forming a solid object.

One thing to note: in its evolution since the '80s, 3-D printing in general has been complicated by the fact that not everybody uses the same phrase to describe the same process. Some say laser sintering. Some say additive manufacturing, or digital fabrication, or, shortening that, fabbing. In homage to a very popular brand of 3-D printer, manufactured by the Dutch firm Ultimaker, some deploy the verb *ultimaking*. Either way, the binding idea, as Lipson and Kurman write, was always “to make a machine that can make anything.”

Progress toward this end has been particularly rapid in the past decade. “Driven forward,” Lipson and Kurman explain, by a cocktail of millennial expedients that include “computing power, new design software, new materials, and the rocket fuel of innovation, the Internet.” Things got particularly exciting, as they point out, when it was realized that “if a 3-D printer is arranged so its printing apparatus can move freely, a 3-D printer can fabricate objects larger than itself.” Benches! Bicycle frames!

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Structural elements at the 3D Print Canal House site show the variety of forms with which the team at DUS is experimenting



Bedrooms! Would whole houses be possible?

Five years ago, a trio of architects in the Netherlands bought a desktop Ultimaker to assist them with the architectural models they needed for their projects. The trio—Hedwig Heinsman, Hans Vermeulen, and Martine de Wit, all now in their mid-thirties, who together formed the Amsterdam-based practice DUS—rapidly started to wonder why they were only printing scaled-down models of buildings and not buildings themselves. Why not try to 3-D-print a whole house?

Their project, the 3D Print Canal House, is now two or three years old. Having sourced a 400-square-meter plot of land on the banks of a canal, Heinsman and her colleagues experimented with potential manufacturing materials, eventually settling on a plant-based bioplastic derived from linseed oil. They collaborated with the firm behind the Ultimaker to make a special trailer-sized 3-D printer, large enough to print whole rooms and pieces of rooms. Heinsman describes the first year or so as a period of “learning, failing, learning, failing.”

→  
The 3D Print Canal House site, which has welcomed visitors including Barack Obama

Still, interest in the project grew—prizes, cameracrews, school tours, a visit from Barack Obama—and they scaled up their ambition, switching sites to a 4,000-square-meter plot in the fashionable northern quarter of Amsterdam. Heinsman, speaking over Skype from a temporary room on that construction site, says that the project is symbolic of what can be achieved in terms of collaborative, community-focused design. The specific design of the tall, multiroom Canal House, she explains, has changed enormously and continuously—



Photography by Oliver Middendorp for Hollandse Hoogte

↑  
A detail of the 3-D-printed structure at the 3D Print Canal House. The architects say that the specific design has changed “tenfold” since its inception, based on testing and suggestions

“tenfold”—since its inception. A visitor has an idea and it’s a good one? They incorporate it. “We call it a tangible production process,” says Heinsman. “Three-dimensional printing in this way is super-direct. We design something on the computer, and instantly we have a one-to-one test print on-site.”

Heinsman and her colleagues are coy about the ultimate cost of the Canal House. They point out that while “it showcases unique building products that are more affordable than traditionally custom-made building products,” it’s hard to account for years of development and planning. “As such, it’s priceless.” These architects, for all their ambition, aren’t proposing that housing blocks, schools, or hospitals be 3-D-printed any time soon. Why, then, is their project a good thing?

Think of a new museum or hospital or monument that gets erected in your city, says Heinsman. How involved did you feel in its creation? Materials, usually laboriously and pollutingly fabricated elsewhere, have to be conveyed to the site. In anticipation of this, blueprints will have been finalized long before. So major decisions about buildings tend to be made without input from the neighbor-



Photo courtesy of DUS Architects

**“WE CALL IT A TANGIBLE PRODUCTION PROCESS. THREE-DIMENSIONAL PRINTING IN THIS WAY IS SUPERDIRECT. WE DESIGN SOMETHING ON THE COMPUTER, AND INSTANTLY WE HAVE A ONE-TO-ONE TEST PRINT ON-SITE”**

hoods these buildings will loom in. The 3D Print Canal House is quite different, says Heinsman. It can adapt to community input, with little delay, at little cost. Parts aren’t made out of town and trucked in—with a mobile 3-D printer on-site, all construction happens in the same place the building will eventually stand. A major change, structural or aesthetic, even deep into the build, can be achieved as simply and painlessly as pulling out a section, melting it down, redesigning it, reprinting it. Tap tap tap. Print print print.

“It’s a new type of crafting,” says Heinsman. “It democratizes architecture.”

When the Canal House is finished, Heinsman and her team expect to move in permanently, relocating their offices to the entirely fabricated building. At some point in 2017, Heinsman predicts, the roof will go on and the building—complete with guest house, library, workshop, lavatories—will be habitable. “We expect to stay indefinitely,” Heinsman says cheerfully.

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About 300 miles away, in a workshop at the University of Southampton, in the south of England, Jim Scanlan holds up the pieces of what looks like a broken toy airplane. He is less cheerful, and frowns, wondering about potential repairs. Use an adhesive to stick it back together? Or do something “quick and dirty” with tape?

The 57-year-old, bespectacled and trim, with a parted wave of brown hair, is an aerospace engineer. He used to work for Airbus and now he co-



University Laser Sintered Aircraft, its five parts “completely 3-D printed,” says Scanlan. “More or less straight off the printer, we slot them together.” He holds up the chassis of the broken plane to show off the intricate, criss-crossing patterning inside its hollow body. “An internal triangulated structure stiffens the whole thing,” he says. “Amazing strength-to-weight ratio.”

Scanlan is a flight-history buff and has watched with amazement and delight how obsolete methods of airplane design have been resurrected thanks to 3-D printing. The SULSA itself incorporates two World War II-era technologies, Scanlan explains—the crosshatched internal structure based on that of the old Wellington bomber, and the elliptical wings based on the Spitfire. The curves inherent in these two elements make them special and, until the advent of 3-D printing, especially frustrating. “These were always incredibly difficult structures to produce. They required a lot of special tooling. They were expensive.” In peacetime, aircraft designers more or less gave up on the Wellington bomber chassis and the Spitfire wings, because they were such a pain to make. “Traditional manufacturing likes straight lines,” Scanlan says with a shrug.

It is some of the things about 3-D printing that satisfies enthusiasts the most—because objects are built layer by layer, gel-squirting nozzles or powder-hardening lasers guided with superaccuracy by computer design files, it’s a process that handles complexity as happily as simplicity. Shapes that would once have been impossible to manufacture are no longer impossible to manufacture. The difficult is no longer difficult, the expensive less expensive, never so

little time consumed. A straight line? A curve? “The 3-D printer doesn’t care!” says Scanlan. “We’ve got no manufacturing restraints. So let’s have elliptical wings on our SULSA, please.”

How did his department’s collaboration with the British Navy come about? Scanlan explains that First Sea Lord George Zambellas is an old alum of the University of Southampton’s engineering department. Not long ago, Zambellas returned for a visit and was fascinated by the SULSA in Scanlan’s workshop. Test flights of the 3-D-printed craft (including the one that ended in a crash) began last summer, and versions of Scanlan’s little plane have

runs a department at Southampton that teaches students how to build, among other things, flyable aircraft. The one Scanlan holds in his hands—the one in pieces—was recently borrowed by the Navy, which has a base not too far away in Portsmouth.

“They crashed it,” says Scanlan. He decides against repairs. He’ll probably get around to printing another one.

The plane, about the size of a large kite, and resembling a narrow missile with long elliptical wings, was first designed by Scanlan and his team five years ago and remains the pride of the department. They call it the SULSA, for Southampton

**“THREE-DIMENSIONAL PRINTING IS A PROCESS THAT HANDLES COMPLEXITY AS HAPPILY AS SIMPLICITY. SHAPES THAT WOULD ONCE HAVE BEEN IMPOSSIBLE TO MANUFACTURE ARE NO LONGER IMPOSSIBLE TO MANUFACTURE”**

Photography by Luca J. Sage

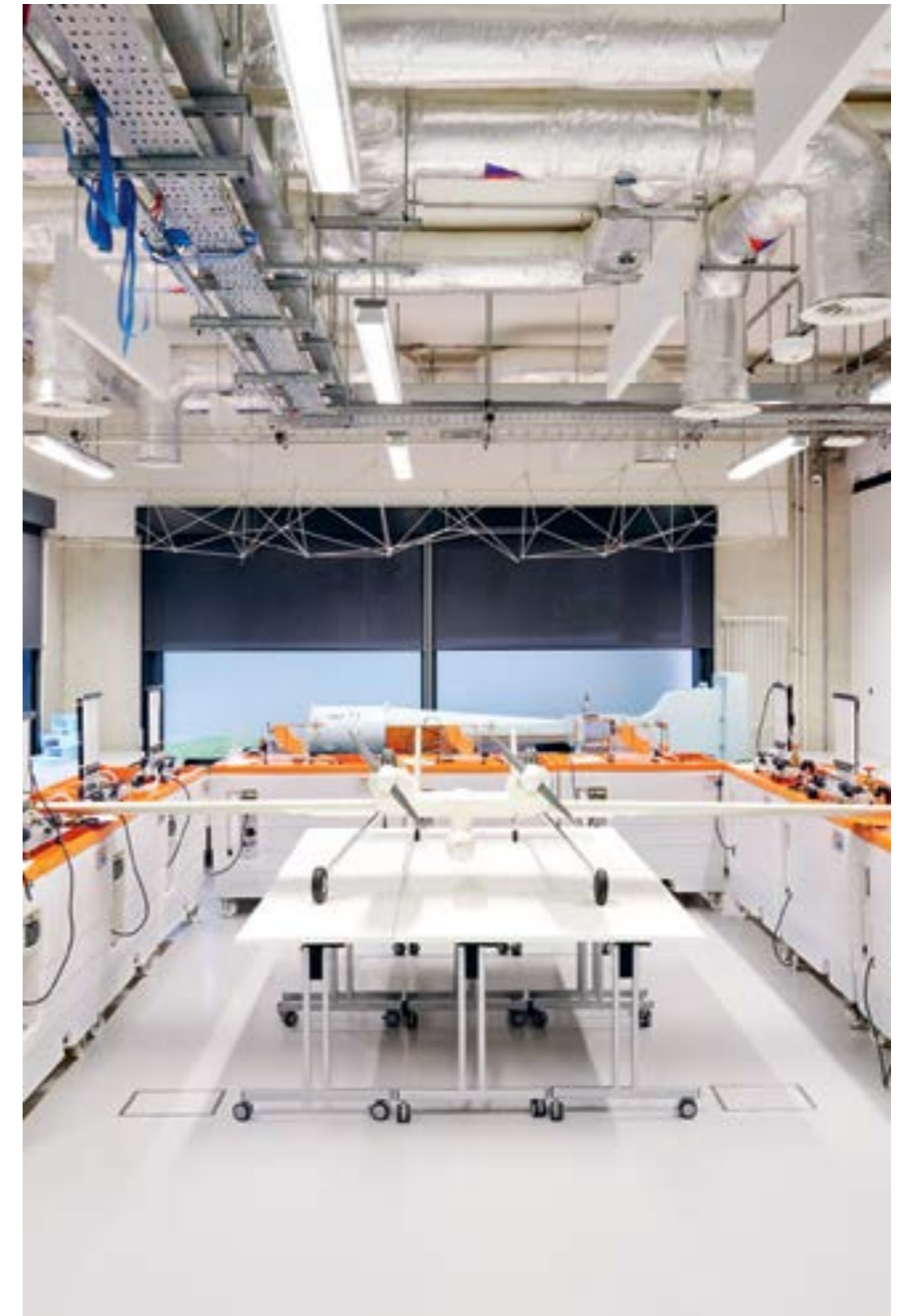
since been launched from the *HMS Mersey*, off the British coast, and from *HMS Protector*, currently stationed in the South Atlantic Ocean. Fitted with high-definition cameras, those SULSAs were being put through their paces as navigational aids, Scanlan says, helping find cracks in the ice, for instance, as the *Protector* traversed frozen waters.

The American and Chinese navies are among those known to have already installed 3-D printers aboard their warships. The stated aim of these organizations—stated obliquely—only to be able to quickly and efficiently manufacture replacement ship parts while at sea. The British Navy, according to a report by Bloomberg last year, has less benign-sounding intentions for the technology; the evaluation of “unmanned sub-surface torpedo-shaped” minesweepers, the report claimed, is ongoing. Whatever the truth in that, the Navy’s top guy, Zambellas, is an on-the-record enthusiast.

“Low cost, simple production,” Zambellas said of 3-D printing last autumn, at a conference in the United Kingdom for military and military-related figures. “No lead time, no requirement to wait for parts to arrive in theater—equipment from the drawing board to the front line, in the click of the button. The advantages in a fast-changing, high-threat environment are obvious.”

Is this where 3-D printing is heading in the end—into battle?

For all that people such as the Shahs in Chicago and the Canal House team in Amsterdam pursue novel, noble solutions to existing problems, we



↑  
A Dimension 1200es 3-D printer, one of the best prototype makers on the market, at the Southampton University facility

↑  
A complete SULSA (Southampton University Laser Sintered Aircraft) sits in a university workshop, awaiting takeoff

A peek inside the broken SULSA chassis, which shows off a crisscrossing pattern that helps make the plane more robust



**IN AMSTERDAM, THE CANAL HOUSE TEAM RECENTLY DEVELOPED A WAY TO TAKE THE WASTE PRODUCTS FROM POTATOES AND 3-D-PRINT THEM AS AFFORDABLE FURNITURE**

should also expect that 3-D printing, with grim human inevitability, will create new problems of its own. Lipson and Kurman, in *Fabricated*, do not shy from speculating on the bleaker aspects of a future in which 3-D printing proliferates. Home-printed class-A drugs, perhaps. Maybe home-printed guns. “A few decades from now,” they write, a “littering of quickly discarded print-on-demand plastic novelties” could be the least of our worries. How about “rogue bioprinting services” and “3D printed robotic life forms [taking] their first hesitant baby steps out of the print bed?”

We’re not there yet. What can be said with confidence is that the “trinket era” of 3-D printing is over, the advances that the Shahs and the Canal House team anticipate are close, almost here—but still a few years off. Right now, the technology flutters in a fascinating and fertile limbo.

Enthusiasts imagine with some justification that almost anything is possible. Costs run ever lower, ambition ever higher, and if queasy thoughts

are brought on by news of the world’s militaries embracing 3-D printing—new tech, as it always has done, enabling new mistakes—then there is optimism enough elsewhere in the field to help quell that. In Amsterdam, the Canal House team, taking a break from their construction project, recently developed a way to take the waste products from potatoes and 3-D-print them as affordable furniture. Scanlan and his team at Southampton have 3-D-printed miniature vessels to aid the Royal National Lifeboat Institution in rescues. In her lab in

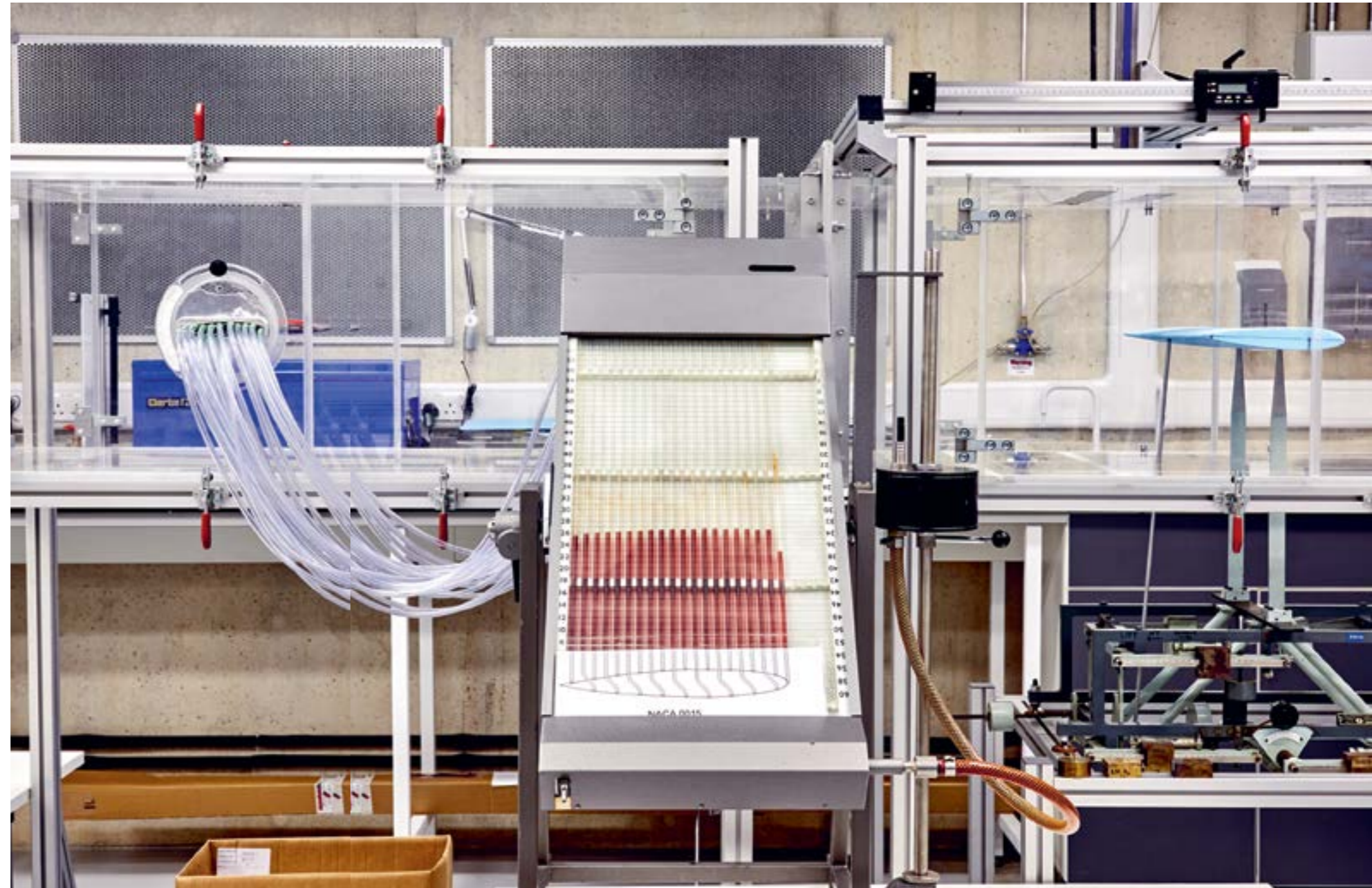
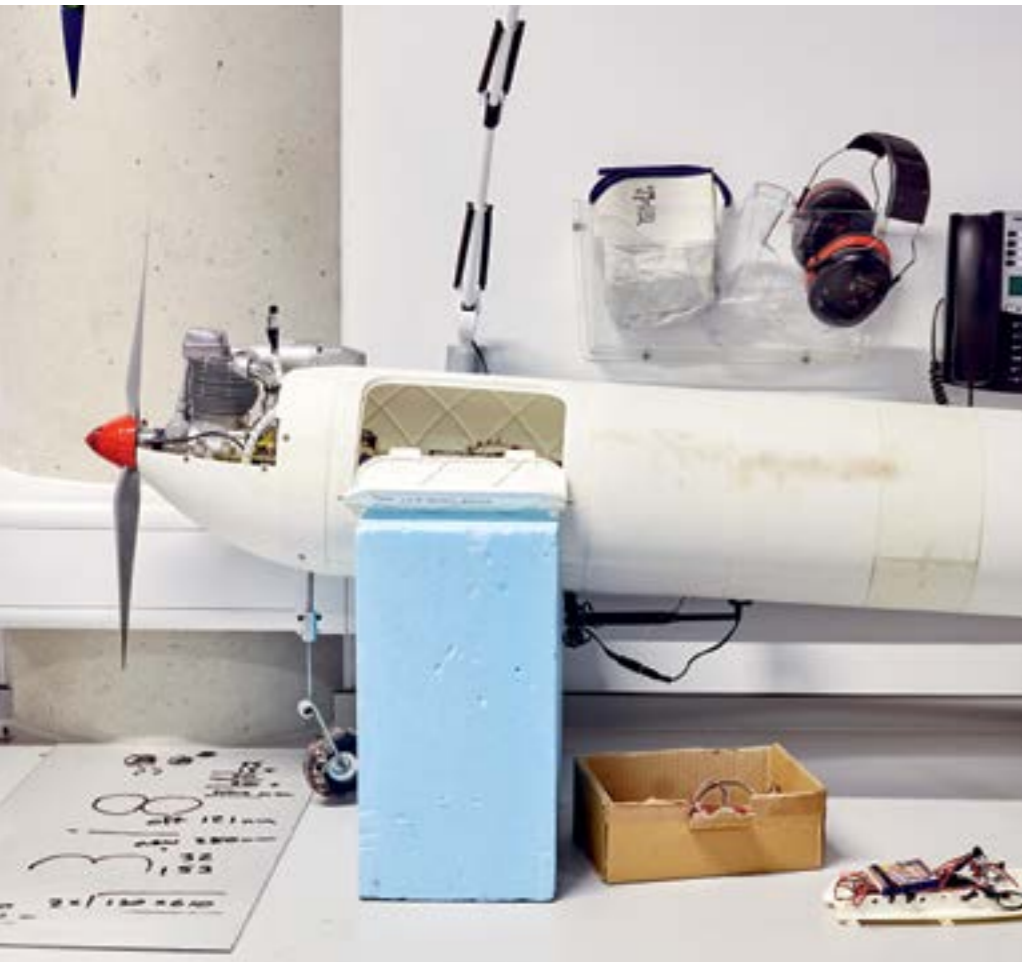
Chicago, Professor Ramille Shah moves to her cabinet of prototypes and takes out a small 3-D-printed object that looks something like a drinking straw, its upper end forked. It’s tiny.

An imitation human trachea, Professor Shah explains, speaking without, now, her habitual smile. It was designed in a mad rush, a few months ago, when a hospital in North Carolina put out a national appeal for help in saving the life of a premature baby. The newborn was suffering from grave respiratory difficulties; doctors on the scene were

running out of options. It was thought that perhaps the hyperelastic polymer that Shah and her team used to make their replica bones could be applied in other ways, as a temporary breathing pipe for the tiny patient.

They tried it. Shah and her team worked flat out for a fortnight, and their 3-D-printed trachea ended up inside a human child. It didn’t quite work, “but we tried to help,” says Professor Shah simply. Like others in the industry around the world, she promises to continue, in her lab, doing just that. ☉

A segment of the 3-D printing machinery at Southampton University. Every part of the SULSA is printed here



# CABINET OF CURIOSITIES



*Formafantasma has crafted design objects from volcanic materials, animal skins, and sea substances, and its most recent mission involved creating a whole, heavily tactile environment. We visit the company at its Amsterdam studio*

Text by Tom Morris and photography by Coke Bartrina



←  
Andrea Trimarchi (left) and Simone Farresin in their Amsterdam studio

An architectural model of an old Fiat factory  
↓



←  
Samples of resin in various pastel colors sit on a meeting table in one corner of the Formafantasma studio

Andrea Trimarchi and Simone Farresin, the Italian cofounders of Studio Formafantasma, like a challenge. Since setting up their Amsterdam-based design practice in 2009, they have made creations out of unconventional—not to mention almost impossible to work with—materials such as lava, basalt, and sea sponge. The development process for new pieces often stretches to a year. They were the first ever duo to apply as a unit to the prestigious Design Academy Eindhoven—and succeed with their radical application—and, for this year's Milan Design Week, they were commissioned by Lexus, which has been present at the event for the past four years, to create not only pieces of furniture but an entire experiential design environment. It's clear that for this design duo, taking the easy road is rarely an option.

Farresin met Trimarchi while studying in Florence, and the professional and personal partnership quickly developed. “We just had a lot in common,” Trimarchi says. “We soon realized we were actually working together and not just hanging out!” They applied as a team to the master's course at Design Academy Eindhoven—the first ever to do so—and Gijs Bakker, one of the leaders of the influential 1990s design movement Droog, took a shine to their gutsiness. “[Bakker] was open to it because he liked our portfolio, and he worked with his wife at the beginning of his career designing jewelry,” Farresin says. “So I think it resonated with him.” This set the precedent for a unique, incredibly harmonious working relationship.

“It's difficult to explain the process,” says Trimarchi, sitting in the pair's peaceful studio in Amsterdam's Noord district. Wooden trinkets are dotted all around, ceramic treasures sit on shelves, and a ladder leans against a bookshelf dotted with tomes and prototypes. Some of their lava works rest on a planning chest between large windows, glinting in the pallid light of a cold February day. The pair's living quarters are located on the mezzanine above, in what was once a stove factory. “When we come to the design process, sometimes he comes up with the idea, sometimes



↑  
Trimarchi and Farresin delight in the use of extraordinary materials. Here, samples stand on a studio table for reference

**“WHEN WE COME TO THE DESIGN PROCESS, SOMETIMES HE COMES UP WITH THE IDEA, SOMETIMES I DO. AFTER THAT, EVERYTHING IS ABOUT DISCUSSING IT WITH EACH OTHER”**

I do,” Trimarchi says. “After that, everything is about discussing it with each other.”  
“It’s really about arguing, actually,” Farresin butts in with perfect timing. “It’s about words.”  
Discussion, instead of traditional “designing,” characterizes their working process and explains why it often takes a year to produce a piece. They will first have an idea, spend time researching around it, collecting images or articles and testing materials, and only then start drawing. The duo’s Botanica project, from 2011, began this way. They were commissioned by Fondazione Plart, an Italian scientific research body, to explore the world of plastic materials. Their response? To imagine if oil had never been discovered, a move that was catalytic in the development of polymer materials and what we now commonly understand as plastic. They looked instead to nature

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Alongside books, project folders, and knickknacks, the pair display evolving maquettes on studio shelving

The pair regularly investigate how materials, like the wood of this stool, wear over time

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for polymers extracted from plants or animal-derivatives and created a series of vessels made from natural shellac, wood fiber, and copal resin. They looked like Roman treasures: not what you’d expect of plastic. “We wanted to skip 150 years of history,” explains Trimarchi. “There are clichés about how plastic looks—always shiny, super perfect, no texture—and we wanted to rediscover a different tactility within the material. We wanted to fight that cliché.”

This radical approach to materiality and design—which is also evident in projects like “Craftica”, a 2012 project for Fendi, which saw them use fish skin, cork leather and animal bladders to produce elegant stools and tableware—could perhaps be explained by the pair’s heritage. Growing up in the 1980s, at the tail-end of Italy’s 20th century design heyday, had a big impact on them, and they cite Italian masters such as Gio Ponti and Enzo Mari, not to mention the Post-modern designer Ettore Sottsass, as influences. “Great stuff, but it is gigantic baggage if you’re Italian,” Farresin admits. Moving to the Netherlands offered a fresh perspective and neutral ground. “In the 1990s here, a fresher approach to design started to grow out of the industry, more independent ways of doing design,” Farresin says. “For us that was liberating.”

StudioFormafantasma’s portfolio now comprises everything from pendant mobiles and tables





↑ A prototype sits on a busy shelving unit. Pieces can take a year to make, so early material tests like these are crucial

Farresin and Trimarchi, who work with a small team, discuss project plans

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to cutlery and glassware. Most recent on their to-do list was the Lexus environment, in which the pair demonstrated a big-thinking, experiential approach to create a brand pavilion at Milan Design Week. The space, which hosted the Lexus Design Award and other activities, explored the pavilion's theme of 'Anticipation' and included cues mined from the brand's production processes. In one room, the pair used hydrogen fuel cell technology similar to that used in the LF-FC to power a striking kinetic sculpture. In another, they positioned several bespoke

metal stools, lacquered using the same paint process applied to the LF-FC, in a circle to encourage conversation. Elsewhere, a Lexus concept car was depicted abstractly by a box made of a delicate weave, which hinted at Japan's history in the early mechanized textile industry. "It was a reference to something we got to know when we

visited Japan," says Trimarchi. "The concept car was not physically present, but we used textiles to represent it." The results throughout the pavilion were both playful and progressive, and completely evocative of the brand and its design mentality.

The resolutely conceptual nature of Studio Formafantasma's work means it does not always lend itself to large-scale production. Bigger projects provide challenges the pair are keen to take on, but their hopes for the future remain generally modest. "We see the studio staying small. We want to grow more solid, but we don't want to grow too much," Trimarchi says. Instead, they would like to move into education, to share their interest in materiality and the natural world with a new generation. Every alchemist needs an apprentice, after all. "We'd like to be in charge of the vision of the course. One of our interests is ecology. Not sustainability, that's different," Trimarchi starts before Farresin interjects. "Sustainability is like telling you, 'Oh you can still buy it, don't worry, the world is going to be fine.' Ecology is saying, 'It's not going to be fine, you'd better not buy it.'" In today's consumer-driven design industry, that's a brave step. But it's a challenge only this gutsy pair could take on. ☺



## PORTFOLIO

### BELL LIGHTS

For Fendi, Formafantasma used leather discarded by the Italian fashion house, fish skin rejected by the food industry, and a range of vegetal-processed leathers to create objects such as the Bell pendant lights.



### DE NATURA FOSSILUM

In collaboration with Gallery Libby Sellers, Formafantasma created a deconstructed clock on three basalt horizontal plates—each showing seconds, minutes, or hours through a brass arm shifting volcanic sand of three different ages.



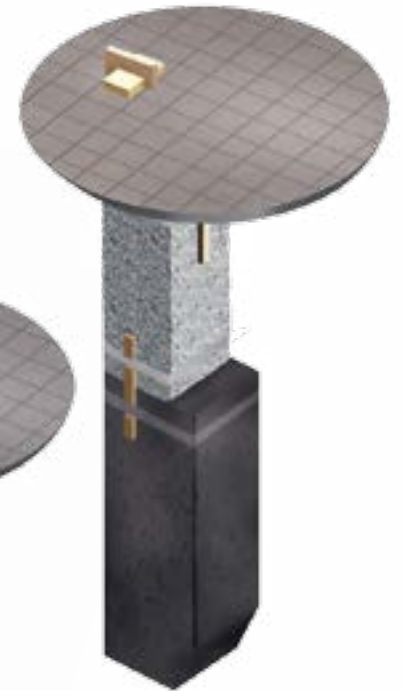
### CHARCOAL

For an initiative of the Vitra Design Museum, Formafantasma worked with a traditional Swiss charcoal burner to develop a series of charcoal water filters. A range of mouth-blown glass jars were created to accompany the filters, which were made from charcoal burned over 5–7 days.



### SMALL PILLAR / BIG PILLAR

The tables in the De Natura Fossilium collection consist of basalt, brass, and textile. Their linear forms are a tribute to the Italian designer Ettore Sottsass, who enjoyed visiting the volcanic islands of Sicily.



### SPONGE STOOL

The Craftica collection for Fendi is characterized by organic forms and a variety of unprocessed natural materials. The legs of the Sponge stool were inspired by fins and incorporated vegetal-tanned salmon leather, cow leather, and, of course, a sponge.



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THE LAB

# OUT IN THE COLD

In a remote town in eastern Canada, where temperatures regularly fall to minus 40 degrees Celsius and the pine-riddled landscape is blanketed in snow, a group of engineers spends months testing Lexus production vehicles for manufacturing missteps and real-world vulnerabilities. Guy Dimond visits with Lexus' Vehicle Environment and Durability Evaluation division.

Text by Guy Dimond and photography by Christoph Morlinghaus







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Temperatures in Timmins are so extremely cold that frost can permeate the interiors of cars undergoing tests

The team hangar, a much-needed safe space providing protection from the cold

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The small town of Timmins, in Ontario, Canada, has one famous export: Shania Twain. The best-selling singer-songwriter grew up here, and left as soon as she could. Which is hardly surprising. Timmins is remote. Winter temperatures typically fluctuate between minus 10 and minus 40 degrees Celsius. No one would stay in a place this cold without a really good reason.

That reason was gold. The town was settled in the wake of a rush at the start of the 20th century, and it stays in business because the mines still do good trade. But for Lexus, it's not the gold that's the attraction. It's the cold.

Lexus sells a lot of cars to people living in places like Timmins. But most of the brand's design and development work is carried out near Nagoya, in Japan, which has hot summers and cool winters. To simulate the colder climates experienced by many of its clients, Lexus built its main road-test circuits on Japan's northernmost island, Hokkaido. The site is surrounded by ski resorts. Lexus teams are accustomed to dealing with snow.

But snow is only one factor of a cold climate. Freeze-thaw cycles allow ice to build up where it's not wanted, damaging wipers, penetrating door locks, freezing windows to the extent that they won't open. Minor annoyances like this can make a car inoperable if the temperature is minus 20 degrees Celsius, which is why Lexus built a cold test site here. This is part of what the Japanese call *genchi genbutsu*—literally, “go and see.” This is a place in which test center employees deal with frozen cars on a daily basis, often for months on end. Curiously, few local drivers have garages in which to park their cars; most people tend to leave them out on their driveways.

**DIFFERENT TYPES OF VIBRATION ARE NOTED USING JAPANESE PHRASES, SUCH AS THE ONOMATOPOEIC *GOTSU GOTSU* (BUMPY), AND *BURU BURU* (SHAKY)**



→  
Engineers run tests on a Lexus RX F SPORT that has been left out overnight in the cold

A recent tour of the site didn't take long. There's a huge, heated hangar here, filled with boxes of electronic equipment; some factory-style beige offices; a snow-covered parking garage; a road-test circuit, hidden from prying eyes by trees and a purpose-built berm, on which sits even more snow. Inside, the only decoration is a few photos on the walls, some from 1974, which is when the center opened. The early teams of test engineers consisted of a dozen or so people, and they were predominantly Japanese. The teams now include mostly North Americans, and consist of eight or so engineers, although only two were present on the Saturday of my visit: Ken Zieseemer, the manager of the Vehicle Environment and Durability Evaluation division; and Jim Shuker, his colleague and a principal technician. Neither is a local, nor even Canadian. Like the rest of Zieseemer's team, they're based in Phoenix, Arizona, where they test vehicles in warm conditions. They visit Timmins in pairs, like migratory ducks. As one pair leaves, another arrives. The winter season begins in November with cold tests in Fairbanks, Alaska; then, in January, when Alaska gets too cold for testing, the team migrates again to Timmins, where they stay until the end of February. On the day of my visit, a Saturday, Lexus engineers from a different team had taken the day off. At minus 10 degrees Celsius, it was too warm for them to cold-test powertrains.

Much of the test-driving here is done on the public roads around Timmins. Zieseemer and Shuker are both cautious, thoughtful men, traits common to many engineers. They work together using few

words, a hallmark of a close working relationship that goes back 16 years. In the car, they listen for odd noises from the suspension or transmission, check for unusual braking, highlight anything else that might unnerve a driver or signal an issue. Longer drives might take a whole day or more. (A trip to Montréal and back will take more than 16 hours.) Different types of vibration are noted using Japanese phrases that can be learned and understood by Lexus engineers around the world, such as the onomatopoeic *gotsu gotsu* (bumpy), and *buru buru* (shaky). On the day of my visit, the pine- and birch-riddled landscape was covered in a deep layer of snow, but the sun was bright, the temperature relatively mild. On our drive, nothing untoward happened. No *gotsu gotsu*. No *buru buru*.

An engineer, dressed in many layers of warm clothing, checks a parked RX for damage caused by the cold

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**A CHECKLIST COVERING DOZENS OF MOVING PARTS IS FILLED OUT, NOTING ANY ISSUES: HATCHBACK DOORS THAT DON'T GLIDE SHUT QUICKLY ENOUGH, LATCHES THAT STICK**

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A Lexus RX F SPORT out on the test circuit, which is hidden from view by trees

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Engineers in their winter gear stand out in the cold. Team members work in pairs, staying in Timmins until the weather begins to take its toll, then returning to warmer climes

So Zieseimer took a Canadian-built Lexus RX F SPORT, one of a dozen cars currently on test, on a spin around the center's test circuit. On a private track, the pace quickened to test sudden braking, swerving, acceleration and deceleration around sharp corners. Yet the SUV refused to misbehave. Noslithering. Noskidding. It was particularly impressive in an emergency stop, as the car glided smoothly to a halt, only a slight vibration noticeable from the antilock braking system. "It kind of takes the fun out," Zieseimer says.

Then it was back to the mundane but vital daily tests on cars that sit parked outside in temperatures hovering around minus 20 degrees Celsius for weeks on end. A checklist covering dozens of moving parts is filled out, noting any issues: hatchback doors that don't glide shut quickly enough, latches that stick. "Usually problems arise from water incursion," Zieseimer says. "This car was washed yesterday, then left out to freeze." Discoveries are fed back to the Lexus design team in Japan, in a process of continuous improvement. Zieseimer has worked for Lexus for 16 years, and he is clearly pleased that "even small suggestions and recommendations are acted on."

I stepped over some electrical leads in the parking garage, snaking into car interiors, and wondered if these were prototype electric cars that Lexus is working on. "In this case, that's electronic equipment monitoring parked car conditions," Zieseimer says. "The equipment itself has to be heated and well insulated, as it's so cold that LCD screens and the like can be affected. The electrical leads you saw on the way here, though, they work a bit like electric blankets. In this part of Canada, some people use plug-in electrical heaters to keep their engine blocks from freezing. You can get them as an extra when you order the car new from the dealer."

We'd been standing outside for a quarter of an hour, but despite the impressively warm snorkel parka and insulated boots that had been issued to us, there was a sense of relief when we returned indoors. This happened to be the day that Zieseimer was packing up to return to the warmth of Arizona, leaving Shuker on his own for the rest of the day. "I don't like the cold," he admits. Timmins in deep winter has few attractions for anyone, but particularly not for a team accustomed to the Phoenix climate—around 40 degrees Celsius warmer in February. "I tried snowmobiling in minus 25 once," Zieseimer says. "Never again." In a few weeks' time, the site would be dismantled, like Christmas decorations, and put into storage until the next winter test season. "I try and ensure that people on the team aren't here too long," Zieseimer says. "If I tried to make anyone come here for the whole two months, they'd quit their job." ☺

# DESIGNS OF WONDER

Text by Danielle Demetriou  
Photography by Mikio Hasui



*The influential interior designer Masamichi Katayama works in a light, bright, self-designed studio in residential Tokyo. Danielle Demetriou takes a tour*

Masamichi Katayama, dressed in a stylishly casual and well-cut indigo jacket and jumper

Masamichi Katayama is a busy man. He has a string of live concerts to attend, theater performances to fit in, weekly university lectures to conduct, art exhibitions to visit. And last but not least? There are the 30 or so global projects that he is normally juggling at any one time as the famed founder of the Tokyo interior design firm Wonderwall.

Smiling as he reflects on his packed agenda, he says: "It's important for me to enjoy life. Being a designer is challenging, and I have to be inspired by different things on a daily basis in order to create. Fortunately, the things I love—music, theater, art—have turned out to be input in my creative process. For me, being both a consumer and a designer is essential. Even if it does cut into my sleeping time."

Katayama is emerging as something of a design legend in Tokyo. He founded Wonderwall in 2000, and it has quietly acquired a global following for its work, which mixes clean, modern lines with a quintessentially Japanese respect for timeless craftsmanship. Today, the studio has grown to around 20 staff dealing with dozens of international projects, from global flagship stores to intimate, upmarket boutiques.

Katayama's own office is as eye-catching as his social life is busy. Located on a quiet residential lane in Tokyo's Sendagaya neighborhood, the entrance is marked by a dramatically tall and minimal concrete passageway. Inside, the light-filled space is filled with contemporary art and design

**"I HAVE TO COMMUNICATE LEXUS THROUGH THE SPACE, AND FIND A MEETING POINT BETWEEN VISITORS AND THE BRAND. IT'S A BIT LIKE A BLIND DATE"**

classics to rival a world-class gallery—a carefully curated selection of paintings, photography, abstract contemporary sculptures, and iconic furniture, by creatives ranging from Takashi Murakami to Jean Prouvé. And then there is his soft spot for life-size stuffed animals (a polar bear surveys the main meeting room from above).

Unique, airy, impeccably stylish, it is perhaps clear from his office why Katayama was selected to design one particularly innovative project: INTERSECT BY LEXUS, a genre-defying space that aims to embody the creative spirit of the carmaker. Clearly in tune with the brand, he represents its signature fusion of quality Japanese craftsmanship and a modern aesthetic.

The first INTERSECT BY LEXUS opened among the high-end fashion flagships of the Aoyama district of Tokyo in 2013, while the second was completed in Dubai in December of last year. (The next to open is in New York.) The concept is simple: the exquisitely designed spaces—complete with restaurants, galleries, libraries, and CRAFTED FOR LEXUS boutiques selling Lexus-commissioned design products—physically reflect the values of the brand through its timeless design, imaginative spirit, and quality craftsmanship.



Nacása & Partners Inc.

## INTERSECT BY LEXUS DUBAI

INTERSECT BY LEXUS opened in Dubai in 2015. Located at the heart of the Dubai International Financial Centre (DIFC), it is billed as a comfortable destination halfway between home and work—the sort of place in which you can settle in, have a coffee, and work from a laptop, or visit in the evening for a top-notch meal. The cuisine, by chef Tomas Reger, showcases raw and organic dishes divided into small and large plates. And pieces from the CRAFTED FOR LEXUS collection are available for purchase.

"INTERSECT BY LEXUS is a third space, based on the concept of a clubhouse," he explains. "It's about Lexus but in a very subtle way."

In the case of both of the INTERSECT BY LEXUS spaces, Katayama cites one key overriding challenge: creating a place where visitors can experience Lexus—through the spatial design, quality materials, and first-class craftsmanship—outside the conventional confines of a four-wheeled car.

Highlighting this intangible aspect, he explains: "Retail space is going through a new era. Today, you can buy everything through the Internet, which is good, it's convenient. But it means that what we can offer to customers in a physical space is becoming much more important. In terms of INTERSECT BY LEXUS, most people go in order to experience the space. My goal is to help them leave with a lot of good memories."

Centerstage in the new Dubai INTERSECT BY LEXUS is the cutout structure of the interior, with an angular central opening connecting the upper-level restaurant and library and the lower-level "garage" exhibition space. There are echoes of the Aoyama space: the same signature facade (intricate bamboo-laminated lattice with a motif inspired by Lexus' famed spindle grille), as well as warm teak herringbone flooring, bubble-like light sculptures by Lindsey Adelman, and a white-painted collage of car parts forming the exhibition floor in Dubai.

Yet the design is also cleverly rooted in its Middle East location, as reflected in perhaps the most eye-catching of features: the sand dune-inspired ceiling. Numerous white ripples fashioned from white-painted plastic fins float across the ceiling, unexpectedly evoking traditional Japanese wave motifs. "Dubai is famous for its desert, and when I visited and saw the sand dunes, I felt it was such a beautiful scene, and I felt there was some similarity to Japanese craftsmanship in terms of the shapes," he says. "It took numerous hours of design and technical drawing. The balance of the design was very delicate. If the space between the plates or the thickness was even slightly wrong, it would look cheap, or too much—it had to be perfectly measured and balanced." Such attention to detail is key to his success on a raft of projects. And the designer, who will turn 50 this year, apparently has no intention of slowing down, as reflected in his numerous design projects as well as his teaching commitments (he is a full-time professor at Tokyo's Musashino Art University).

Not to forget this extracurricular entertainment. Revealing that he saw Sakanaction, the Japanese band, perform the night before, Katayama excitedly reels off a list of other concerts he is attending in coming days, from the Jesus and Mary Chain to Bob Dylan. Smiling widely, he says: "I want to enjoy my life, and I want to make great design. But actually I know I'm very lucky. The biggest fun I have is with my work." ◌

CRAFTED FOR LEXUS

# ALL EYES

*The best products are the ones designed for life, much like these Kaneko Optical sunglasses*

Text by Annick Weber  
Photography by Baker & Evans

Combining finesse and function, CRAFTED FOR LEXUS is a collection of luxury lifestyle items designed in collaboration with a new wave of Japanese artisans who are reinterpreting traditional crafts in a contemporary way.

For these ultralightweight unisex sunglasses, Lexus worked with Kaneko Optical, whose painstaking production processes take place in the manufacturer's single, integrated factory in the city of Sabae. Each frame is hand-carved and polished for more than 150 hours to achieve eagle-eyed precision. They are designed for comfort and lightness, blending high-grade binchotan—a traditional oak charcoal made in Kishu since the Edo period—with Japanese acetate. And with premium polarized lenses that reduce brightness without compromising vision, they are the perfect driving shades. ◉



## IN FOCUS

The city of Sabae is Japan's leading hub for the manufacturing of high-quality optical frames. Kaneko Optical was founded here in 1958, and since then has become a pioneer in the eyeglass industry for its delicate yet sturdy frames. To this day, all of Kaneko's eyewear are produced under one roof in Sabae by a team of skilled craftspeople from Fukui Prefecture. Not only does this allow the brand to concentrate on the quality of each product, it also distinguishes it from other manufacturers who commonly rely on division of labor to increase their quantity of production.

