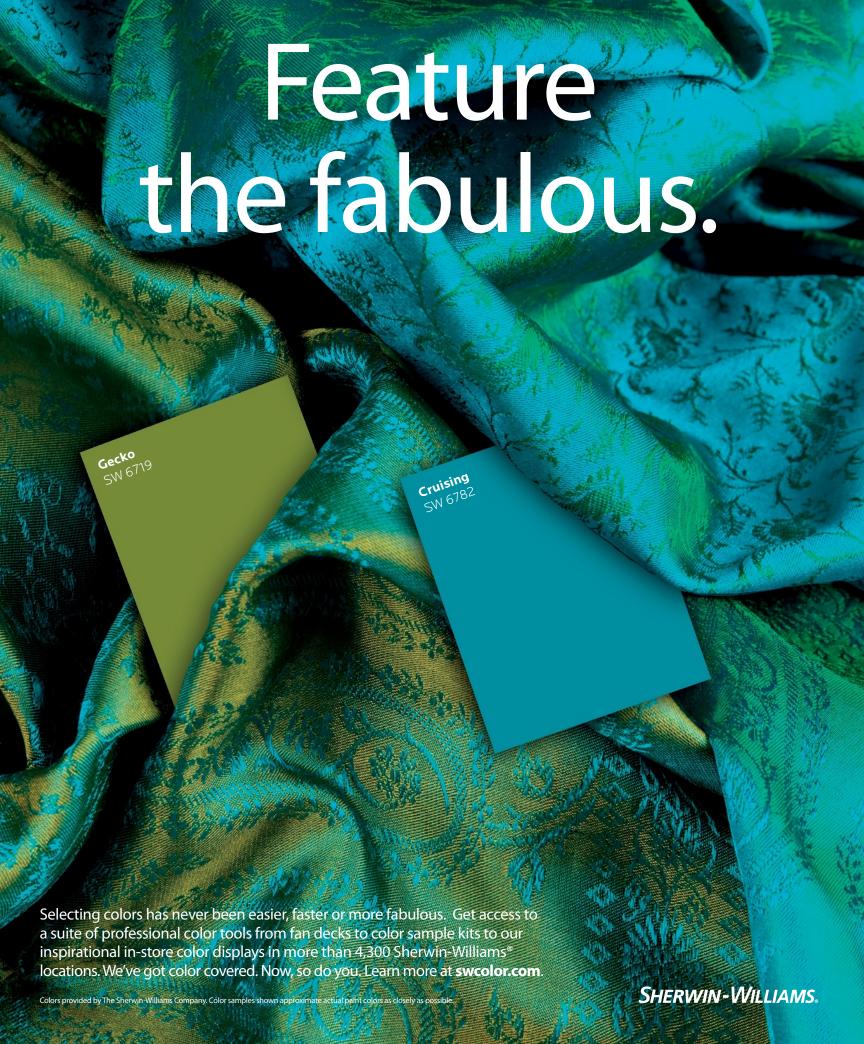
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ITS TOUCH. AN AUTHENTIC PIECE ISN'T "OF

THE MOMENT" OR TOO CONTRIVED. IT'S

SIMPLY SOMETHING YOU NEVER TIRE OF."

- AMY KEHOE

Interior Designer/Co-Founder Nickey Kehoe



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November/December 2018

VOLUME 2/NUMBER 6

The magazine of the American Society of Interior Designers and the Interior Designers of Canada

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THE CHINA SYNDROME

What's the outcome of in-place and potentially rising tariffs with China products, including those used in interior design? Sources say there's good and bad news.

BY BARBARA THAU

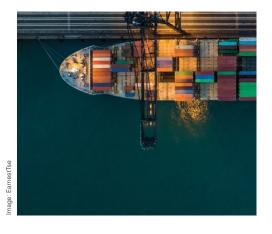


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THE FUTURE-FORWARD KITCHEN

A healthy environment and sustainable world are propelling today's—and tomorrow's—designs for the heart of every home: the kitchen.

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From unique configurations in everyday products to a made-on-site residence, 3D printing appears to know no bounds.

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One of the industry's major talents, this New York-based professional expresses personality and place in each of his interior designs.

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BEAUTY AND SAFETY FOR ALL

Innovative bathroom fixtures and finishes allow a spa-like experience and universal design to coexist.

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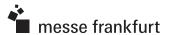


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An Inside View



TO THE HOME AND BEYOND

Research and technology have long been driving forces in the field of interior design. From the development of energy-efficient appliances and antimicrobial surfaces to advances in the design of both structures and products that make places welcoming for all, the design field is intrinsically linked to the health and happiness of people, of spaces of all kinds, and of the world at large.

As we close out the year, this issue of i+D examines where we stand today and where we have the potential to go. In it, we investigate the business climate developing in response to the current and potential China tariffs ("The China Syndrome," p. 26), and we explore the many avenues of interior design and architecture already benefiting from the abilities of 3D printing, as well as the technology's potential for use in building beyond our planet ("Fit to Print," p. 38). We also dive into the home with features focused on designing technologically advanced kitchens for all ages ("The Future-Forward Kitchen," p. 44) and on creating ADA-compliant bathrooms that don't sacrifice style in any way ("Beauty and Safety for All," p. 54).

There is a democracy to design illustrated in these topics and others covered in each issue of i+D. When it comes to advances in the field of design—whether creating new housing options via large-scale printers, allowing a homeowner to gracefully age in place, and more—the options design provides, and the positive impact they can have, know no boundaries. The transformative power of design is available to one and all, be it on our current planet or wherever we may build next. \bullet

Randy W. Fiser

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COMMUNITY HUB

WHEN BRITISH COLUMBIA, CANADA-BASED HCMA ARCHITECTURE + DESIGN SET OUT TO DESIGN THE CLAYTON COMMUNITY CENTRE, IN SURREY, BRITISH COLUMBIA, THE FIRM IMAGINED A PROJECT THAT WOULD PUSH ARCHITECTURAL DESIGN AND SUSTAINABILITY, AS WELL AS PROGRAMMATIC BOUNDARIES, AND BECOME A CENTRAL PART OF LIFE FOR THE REGION.

With its location amid two secondary schools and forested land, the Centre is designed to meet the needs of youth in the region, while also providing spaces and opportunities that connect the entire community. Arts and culture are at the heart of the Centre, with spaces for music and recording, a rehearsal hall, and a library, as well as healthy and overall positive neighborhood experiences like a gymnasium and fitness center, a community kitchen and garden, a tool-sharing center complete with a community workshop, and a variety of childcare and learning spaces.





Beneath the canopy is an inside space that strives to be responsive and evolving, both physically and with its activities.

(Image: HCMA Architecture + Design

The design of the Centre borrows from the surrounding forest and the very experience of being immersed in the trees, branches, leaves, canopy, clearings, dappled light, and refuge a forest can provide. The civic building includes a leaf-like heavy timber structure that mimics a tree canopy, including clerestory pop-outs that elude to light as it peaks through treetops, while connecting individual spaces that make up the community hub. Designed to achieve Passive House certification, the orientation of the building on the site and the location of the program elements within it have been arranged to benefit from the solar path. With these and other considerations, the Centre is on track to be the first community center to achieve Passive House certification in North America and to be Canada's largest Passive House facility to date.

Just as impressive as the Centre's design is the policy change that has come along with it. Under a new governance structure facilitated as part of the design process, the four key service offerings—recreation, library, arts, and parks—will work collaboratively at the new Centre, despite currently operating through different funding and staffing models.

Clayton Community Centre is scheduled to open its doors in 2019. \bullet



HAUTE AND HELPFUL HARDWARE



OFTEN RELEGATED TO THE CATEGORY OF DECORATIVE ELEMENTS, THERE IS A LOT MORE TO THE HARDWARE AVAILABLE IN THE MARKET

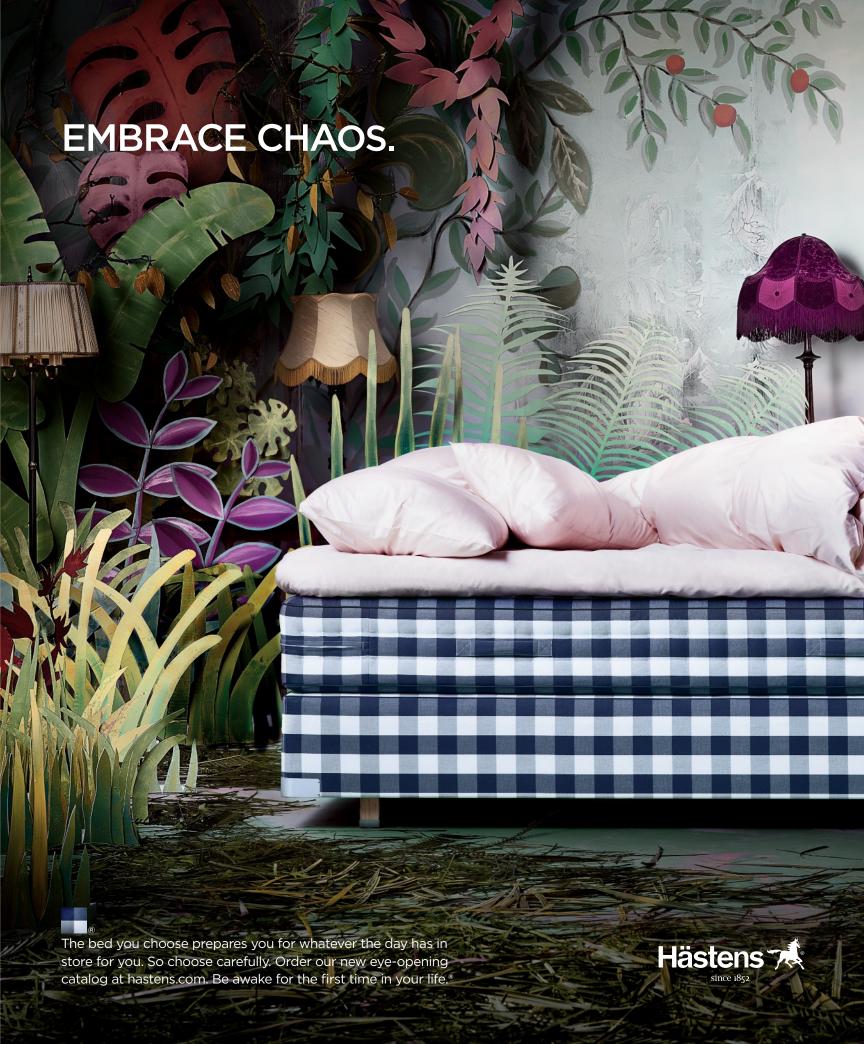
TODAY. Gone are the days when a designer or homeowner had to choose between form and function for hardware that can be utilized in a variety of applications and spaces.

Grab bars have evolved to be not just functional but stylish as well and can add peace of mind and safety for homeowners, as well as guests, in a number of hospitality settings and public spaces, like entertainment venues and retail locations. And, ease of use, be it via a simple lever operation or easy-to-grab handles, is a major factor and benefit in this arena, as is the use of texture to provide both visual and tactile cues for those who may have visual impairments.

The right product can mean a homeowner is able to live and age in place or welcome elder relatives into their homes and, on the commercial side, can ensure travelers and restaurant-goers of all ages and ability levels are comfortable and safe while away from their homes.

For more on creating baths that are both ADA compliant and aesthetically pleasing, see "Beauty and Safety for All," page 54.

1. ROHL, EMPIRE ROYAL. The simple, single-lever operation of this piece from ROHL's Jörger collection makes it accessible for a wider audience. Each piece is handcrafted by German artisans dedicated to the ROHL and Jörger family traditions of aesthetic and technical perfection. 2. NEWPORT BRASS, GRAB BARS. Designed to complement any existing bath collection, the new grab bars are available in seven length options, ranging from 12 inches to 42 inches, and are offered in 27 decorative finishes and a variety of styles. The company also has made sustainability a driving force for its overall production and product development; efforts include the utilization of a low-emissions finish process and the achievement of WaterSense certification for its low-flow faucets. 3. TOP KNOBS, GRACE. Inspired by ageless beauty, the aptly named Grace collection celebrates Top Knobs' 25th anniversary and offers 276 options divided into six different series, ensuring all user needs are met. Top Knobs emphasizes its complete transparency with regard to base materials and offers a search tool that allows designers and consumers to search by brass, bronze, iron, etc. 4. BELWITH-KEELER, CULLET. Shattered shapes lead to a design that offers both textural and visual cues for end-users. Easy-to-grab shapes and sizes add to this style's ease of use. Belwith-Keeler has been designing hardware since 1893 and has in its history expanded its work to create hood ornaments for Ford, along with other goods.





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Business of Design Tariffs

THE CHINA SYNDROME

BY BARBARA THAU

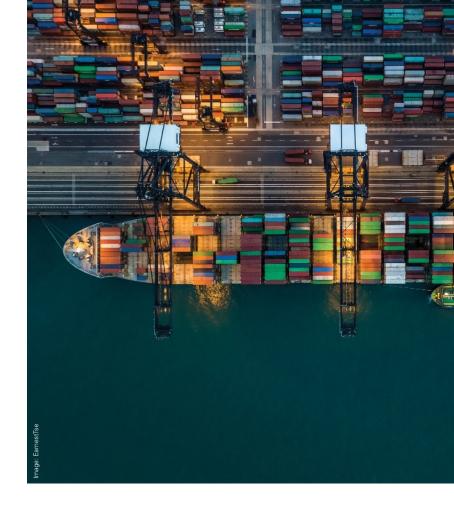
The design community is grappling with tariffs on billions of imports from the trading partner that has become the world's workshop

TARIFFS ON A HEFTY \$200 BILLION WORTH OF CHINESE IMPORTS, FROM LIGHTING FIXTURES TO THE QUARTZ IN KITCHEN COUNTERTOPS, HAVE FORCED AN UNWANTED WHITE HOUSE-IMPOSED RIFT BETWEEN THE DESIGN COMMUNITY AND THE NATION IT HAS COME TO VIEW AS NORTH AMERICA'S FACTORY.

The 10 percent tariffs, which kicked in last fall, but are poised to climb to 25 percent on January 1, 2019, have set off strategic shuffles throughout the interior design supply chain: As vendors selling to the design trade either absorb, mull, or impose price increases, interior design firms grapple with finding domestic and international sourcing partners to offset the expertise of—and well-heeled relationships with—their Chinese partners.

The design trade also is navigating the delicate dance of passing along costs to clients, whose ears are perked for price hikes, while managing projects to avert those very price increases, say design professionals.

In addition to shrinking the trade deficit with China, the tariffs reflect the administration's retaliatory efforts to quell China's "unfair acquisition of U.S. technology and intellectual property," according to a statement from the Office of the United States Trade Representative.



If the tariffs reduce design and product knockoffs, that's a good thing, sources say.

But, a trade war is not the prudent way to go about it, explains economist Marci Rossell of Delphin Investments. "IP theft is a legitimate problem, but the solution should be found through official channels, like the World Trade Organization [WTO], rather than a trade war."

"We have received notices from many of our vendors, both small and large, that they are increasing prices or we should expect price increases in the near future."

—JOHN CIALONE,
TOM STRINGER DESIGN PARTNERS

An Air of Uncertainty

Now, uncertainty hovers over the design community as it maneuvers a forced separation with its biggest trading partner. "Since joining the WTO in 2001, China has become the world's workshop," notes Rossell. "There was a confidence in a stable supply chain as China was integrated into the global economy."

The symbiotic relationship between the nations, one that played out among the design community, has developed so that "the [United States] is the source of ideas and innovation, and China is the implementer of those ideas—the two economies married themselves in that way," Rossell says. Now, with these tariffs, "it's almost like a divorce."

The ripple effect is that prices are going up "for every single input in the interior design and real estate process, at every single point in the supply chain," from fabric costs to all that goes into renovating and outfitting a home, like the 13 percent price spike in washing machines. And, as steeper tariffs on Chinese imports will be levied come January, the design community is preparing for what those increases might bring as there tends to be a lag effect, states Rossell. As a result, a range of contracts tied to design projects, from the factory and the wholesaler to the architect and interior designer to the client, will be renegotiated, "and they'll write in contingencies [anticipating] changes to occur in the future."

Tom Stringer Design Partners already is doing just that, adjusting project meetings and completion dates, as raw material prices for both furniture, fixtures, and equipment (FFE) and construction materials are of concern, explains John Cialone, partner and vice president of the firm, who also serves as president of the Illinois chapter of the American Society of Interior Designers (ASID-IL). "We have received notices from many of our vendors, both small and large, that they are increasing prices or we should expect price increases in the near future," he says. As a result, "I've encouraged some clients to purchase some specific items and larger-scale purchases so that passed-along increases don't affect their project." In anticipation of a 15 percent price surge from a lighting vendor, for example, the firm advised one client to purchase a fixture earlier than planned to skirt the hike.

"Design clients are following these issues as it relates to the bigger picture in the economy and their personal [financial standing]," notes Cialone. So, while they're noticing that their 401k is up, "they're also noticing [the price of] raw materials and goods are up."

While Tom Stringer Design Partners hasn't taken a business hit from the tariffs just yet, "we are anticipating a potential decrease in overall sales if people start to lose confidence," adds Cialone.

For its part, the firm is exploring local manufacturers that source closer to home as one way to avoid the international tariffs. Although local sources could become scarcer and pricier due to higher demand, "we'd be supporting our local community," Cialone says.



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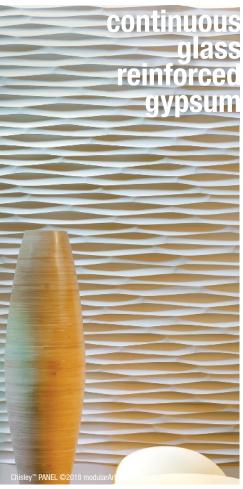
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Business of Design Tariffs



John Cialone, Tom Stringer Design Partners

The IP Factor

Another potential silver lining from the tariffs: ceasing knockoffs of original designs coming from foreign countries. "I do think that would be a benefit," Cialone notes.

Mitchell Gold, CEO of Mitchell Gold + Bob Williams, actually agrees with the president on China's intellectual property abuses, and that the country should be penalized for its design knockoffs. Italy, for one, "would not copy someone else's product [so] exactly," he says. But, the administration did not give suppliers information in a timely manner so that they could plan accordingly, he explains. "All of a sudden, there's a shipment from China, and there's a charge of \$8,000 in tariffs."

Although most of Mitchell Gold + Bob Williams' home furnishings are produced in the United States from its 1 million-square-foot factory, the company still is feeling the effects of the China tariffs on component materials and some finished goods. In fact, the furniture company has faced a 10 percent hike in the cost of fabrics, about 20 percent of which come from China, as well as materials like chrome and polished steel.

While the tariffs have prompted the firm to increase its sourcing from Indonesia, Vietnam, and the Philippines, that's easier said than done. China's huge labor force, production prowess, and the company's long-nurtured, working relationships with its manufacturer partners there are invaluable and not easily replaced, according to Gold.

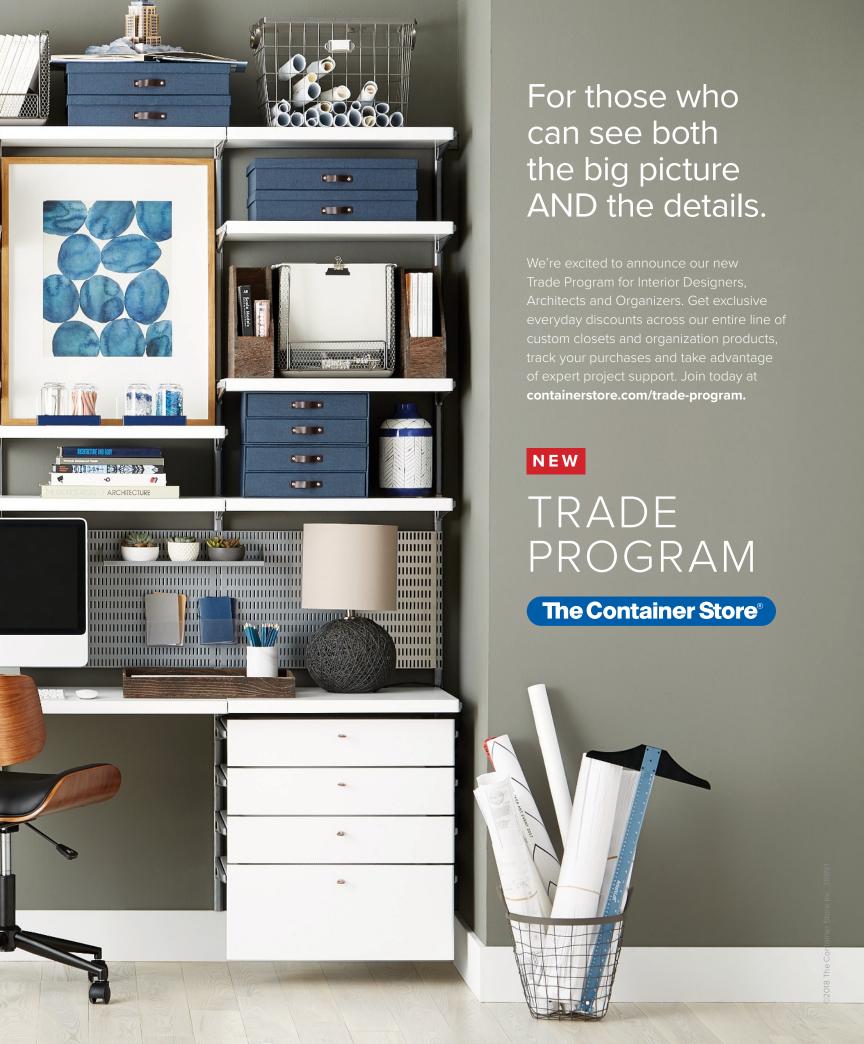
For example, finding a factory expert in multimedia production—one that can make a bedroom collection whereby "the legs are polished stainless and the rest is glass and wood"—with quality and craftsmanship akin to its Chinese factories is a feat, Gold explains. "We really simply wish there was not a trade conflict or a need for one."



Marci Rossell, Delphin Investments (Image: Steve Green, David Durochik Photography

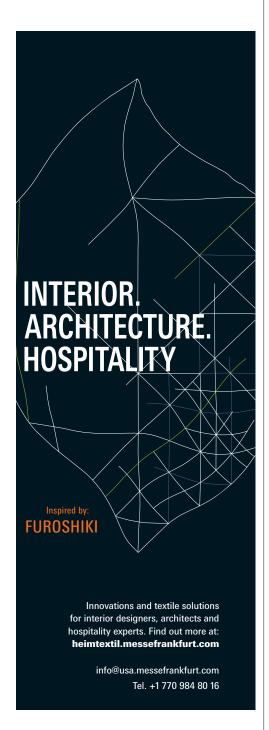
"IP theft is a legitimate problem, but the solution should be found through official channels, like the World Trade Organization [WTO], rather than a trade war."

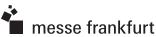
-MARCI ROSSELL, DELPHIN INVESTMENTS



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Business of Design Tariffs



Bob Ulrich, Currey & Company

To Raise Prices, or Not to Raise Prices

Currey & Company sources an estimated 30 percent of its goods from China, including such finished products as chandeliers, lamps, and accent furniture, as well as such materials as iron, porcelain, and brass. It opted not to pass along the 10 percent hike to its design clients in the United States and Canada last fall. "Our concern was with our customers and their projects," says Bob Ulrich, senior vice president of sales and marketing for the home furnishings design firm.

While its sales have not suffered yet, the company is waiting to see if the next phase of tariffs in January will indeed come to be. If so, "a 25 percent increase is too big to absorb, and we will need to adjust our prices on those products resourced in China to reflect this additional cost," he states.

In anticipation of the increase, Currey & Company began adding disclaimers to its design projects, stating that all quotes that include products imported from China are valid until December 31, 2018, but are subject to adjustments as of January 1, if the 25 percent tariff takes effect. "This is an uncomfortable position, as prices are often quoted months in advance of purchase, and these quotes are the foundation of setting the budgets for these design projects," says Ulrich.

Still, the company is fortunate to be cushioned by a diversified sourcing model, he adds. "We are not dependent on China as a primary resource. Our trading partners in the Philippines, Indonesia, India, and Vietnam make up the majority of what we manufacture, and continue to see additional growth."

Looking for that silver lining—a reduction in IP theft, support of local trade partners, a diverse sourcing model—will be a focus as we turn over to a new year, one that could see the tariff situation escalate. For now at least, the design community will continue its watch and wait stance, making adjustments as needed and keeping its own bottom line and that of its clients close in sight. •

BARBARA THAU

is a business journalist specializing in the retail industry and consumer news and trends. She currently is a contributing writer for Forbes.com for which she writes the weekly column, "Minding The Stores." She has been cited as a retail expert for media outlets, including USA Today, National Public Radio, and CNN Money.



THE COMMERCIAL CLIMATE

Part of the Urban Land Institute's Center for Sustainability and Economic Performance, the Greenprint Center for Building Performance is an alliance of global real estate owners, investors, and financial institutions who are committed to improving environmental performance across the global property industry. A new report from the Greenprint Center shows the commercial real estate industry making significant progress in reducing energy consumption, carbon emissions, water usage, and waste disposal.

The *Greenprint Performance Report* tracks, benchmarks, and analyzes the performance of nearly 8,000 properties globally owned by Greenprint's members. The latest report, Volume 9, shows those properties demonstrated a 3.3 percent reduction in energy consumption, a 3.4 percent reduction in carbon emissions,

and a 2.9 percent reduction in water use between 2016 and 2017. The reduction in emissions alone in 2017 is the equivalent of approximately 1.5 million trees planted, 12,600 cars taken off the road, 6,300 homes consuming no energy, and 136,000 barrels of oil not consumed. This marked the eighth consecutive year that members showed improved building performance, with regard to energy consumed and emissions reduced.

Buildings account for more than one-third of global climate-changing carbon emissions. These recent numbers indicate Greenprint members are on target to surpass the group's target of a 50 percent emissions reduction by 2030, a timeframe that is in line with the goals of the Intergovernmental Panel on Climate Change and the ratified United Nations' Paris Agreement (Paris climate accord). ●

Greenprint

Member

Reductions

3.3% Energy Consumption

3.4%

Carbon Emissions

2.9%

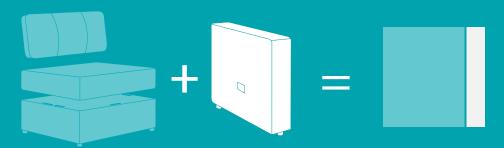
Water Use

Source: Greenprint Performance Report, Volume 9

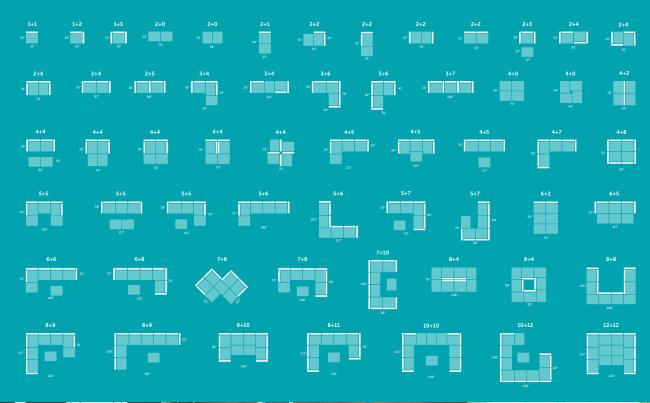


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Contributors

Once relegated to a computer screen as a great visual tool, our current 3D reality resembles the sci-fi fantasies of generations gone by, with the printing of everything from furnishings to entire homes bringing once far-flung creative ideas to fruition. The authors in this issue of *i*+D offer their perspectives on the wonders of 3D printing, as well as details on the topics each covered in their articles.

1. Michele Keith, Beauty and Safety for All Michele was quite amazed at the colossal number of faucet designs when working on her article on bathrooms (p. 54). "Just when I thought I'd seen them all, up popped another collection. Goes to prove that we certainly have a wealth of imaginative people in the design field," she says. "Also, I felt that the designers I interviewed are not only on top of all the latest, most important ADA rules and regs, but truly bent on providing their clients with the best and most applicable systems to meet their particular needs and desires." When it comes to 3D printing and technology in general, Michele thinks the sky's the limit. "I do hope, however, that in the future a good part of [technology] is used to find cures for such diseases as Alzheimer's and cancer and improving education around the world. That said," she adds, "I have always wanted my own jetpack to flit around the city, although someone would have to figure out a good way to avoid crashes!"

2. Ambrose Clancy, ICONic Profile: Jamie Drake "Making of art seems to be an intriguing path for 3D printing. What's frightening is manufacturing plastic weapons at home," says Ambrose, when revealing some pros and cons of the technology featured in this issue's lead article. There were only positives, however, during his interview with Jamie Drake for the "ICONic Profile" series (p. 52). Ambrose was impressed by "Jamie's sense of direction, and his belief in not being distracted when making an important decision, but acting firmly and quickly," he explains, when citing Drake's early commitment to attending Parsons School of Design and his later decision to take

on a partner after nearly 40 years of running his own firm. Drake surprised Ambrose, however, when explaining "there are no cut-and-dried strategies for designing in different regions of the country anymore." Professionally speaking, but on a more personal note, Ambrose is editor of the *Shelter Island Reporter*, which recently received an award from the National Newspaper Association for "General Excellence" for a weekly newspaper. "We're all happily letting it go to our heads," he declares.

3. Jessica Goldbogen Harlan,

The Future-Forward Kitchen

Jessica attended the Institute of Culinary Education, so identifying with her article on the design of kitchens (p. 44) was a recipe for success. "I was really excited to hear about some of the smart technology that is finally actually being incorporated into home kitchens. I first started hearing about smart kitchen appliances two decades ago...it's been a long time coming, but I'm glad to see some of these innovations finally arriving!" she enthuses. Jessica was pleased to learn about the many options and modifications available for people with mobility issues, including small children. "I teach cooking classes to kids and I see them struggle with counters that are too high, microwaves they can't reach, and other obstacles. If parts of the kitchen are designed with kids in mind, they'll undoubtedly grow up to be confident, capable cooks," she notes. With respect to 3D printing, Jessica would love to see more incorporated into kitchen design. "I think it has amazing potential for things like custom drawer pulls, organizers like drawer dividers in nonstandard cabinetry, or pendant light fixtures and other decorative touches," she asserts.

4. Brian Libby, Fit to Print

"I'm excited by 3D printing's capabilities," explains Brian, "so much so that I suspect in the future it may not necessarily be known as 3D printing because it will have expanded so far beyond its original purpose to really be an automated building industry. I was most excited by the variety of materials that can now be printed, from concrete and ceramics to metal and glass." Although he learned a lot while researching the topic for this issue (p. 38), what most surprised him "is the rapid liquid printing process that was developed by MIT and Steelcase. It's really 3D printing 2.0." His personal wish list? "The college football fan in me would like a model of the Rose Bowl stadium," he conveys. In his spare time, Brian is working on a book: In Search of Portland [Oregon], "where I explore the city's history and some of its most famous residents, from painter Mark Rothko to musician Elliott Smith."

5. Barbara Thau, The China Syndrome

While researching her "Business of Design" article on tariffs (p. 26), Barbara was particularly surprised about "the close working, symbiotic relationships established between the Chinese manufacturing sector and the North American design community— one that developed over time, and can't just simply be replicated in a New York minute." Which, of course, is a very appropriate comparison from this New Yorker wordsmith. What does Barbara think about 3D printing and its developing technology and opportunities? "I love the idea of using 3D to put the power of personalized creation in the hands of everyday consumers," she says. •





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Designer Peter Donders combines craftsmanship with computer technology to create unique furniture pieces, including his Dusty chair made of birch plywood. (lmaue: Peter[Onders.com)



3D printing is changing how everything is made, from furniture and faucets to even buildings themselves

From producing the tiniest objects to even full-scale buildings, 3D printing is one of those rare inventions, like the internet or the printing press, that may transform our daily lives and even our whole economy.

Since the Industrial Revolution, manufacturing has largely been confined to a select few who possess the resources for mass production. Now, thanks to a new generation of 3D printers, many of them affordable, the process of designing and producing an object can be performed by anyone, anywhere—be it individuals tinkering at home, designers prototyping ideas, or, in some cases, companies engaged in modest forms of mass production. All told, the 3D printing market is expected to be worth more than \$32 billion by 2023, at an annual growth rate of just over 25 percent, according to business-to-business research firm MarketsandMarkets.

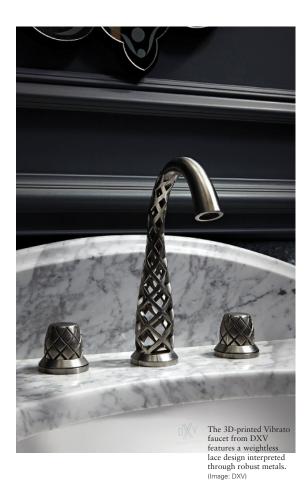
Perhaps no other profession will ultimately be affected more by 3D printing's future than that of interior design. After all, every scale of design at home, at work, and at play could be affected. But, any exciting new technology also brings its share of hype. How far has 3D printing really made its way into the mainstream, and how far can we expect the technology to take us?

Of course, there is no single answer to that question, for there is a whole landscape of 3D-printed products and possibilities to explore. What's clear, though, is that our basic notion of the technology—fairly small objects made from many thin layers of plastic resin—already is transforming.

Streams of Possibility

A case in point is the DXV by American Standard line of faucets from LIXIL Corporation, 3D-printed products using a metal powder that first were introduced in 2015. The faucets are distinctive even if one doesn't know they were printed using 3D technology, with sculptural shapes that also artfully guide water flow. The Vibrato model, for example, twists its metal shape into a mesh, while the Shadowbrook faucet combines 19 different individual flows into one, aping the sound of a babbling brook.

"The most important criteria for using 3D printing is that it's the absolute only technique you can use to manufacture these shapes," explains Jean-Jacques L'Henaff, vice president of design for LIXIL Americas. "People think you hit a button and print and a product comes out. But, it's more complicated than that. It was a pretty long learning curve."



DXV's faucets use a metallic powder that's melted into different shapes, but the overhanging form of most faucets was problematic. "We realized metal printing needed a support structure," L'Henaff explains. "You do it with plastic and melt it afterward. We made about 100 test prints of these faucets before getting it right, each one requiring about 100 of printing. It took a long time to get to a point where we could create a repeatable process. But, now that we've solved that riddle, we can create any shape we want."

Metal isn't the only material being 3D printed these days. Researchers at Germany's Karlsruhe Institute of Technology, as well as the Massachusetts Institute of Technology, have been experimenting with 3D-printed glass. Ceramic 3D printers already have hit the market, enabling one to print everything from floor tiles to dishes and other housewares. More than ever, it may be possible for designers to create a completely holistic design, as icons like Frank Lloyd Wright once did, designing everything from a home itself to its table and table settings.

3D + Craftsmanship

Furniture is ideally suited for 3D printing, and a host of furniture designers have produced chairs, tables, and other pieces using this process throughout the past decade. In 2014, for example, Philips commissioned a series of 3D-printed lamps by design firms WertelOberfell from Berlin and Strand+Hvass from Denmark, although they were priced in the thousands of dollars. More recently, IKEA introduced its 3D-printed OMEDELBAR metal wall decorations, which are shaped like hands.

Many furniture designers are finding ways to produce furniture that combines aspects of 3D printing and traditional craftsmanship. In many cases, the 3D-printed version of a piece of furniture is a prototype; in other cases, however, it's a finished product. Still other scenarios find 3D printing actually doesn't make the furniture, but makes it possible. Take Belgian furniture designer Peter Donders, who uses 3D printing both as a production method and, in other cases, to create molds for traditionally manufactured pieces. "As a craftsman, I'm used to making things by hand," says Donders, the son of a carpenter who grew up building furniture but began using 3D printing a decade ago. "I can go much further in my designs: more complexity, more detail, and even more variations of one design."

Donders' *Batoidea* chair, first produced for a Moscow Design Week competition in 2011, uses disposable molds 3D printed with sand to create a curved chair with a web-like form. For a later design—the metal Ti-Join chair—Donders designed and 3D printed the titanium joints, in addition to using the sand-mold process. The Ti-Join makes its printed joints the star of the chair rather than something to hide. "The customer loves to see the details of the craft," the designer explains. "It gives the design personality along with the shape."



A 3D-printed home in Texas, created with ICON's Vulcan printer, may be a precursor to solving housing shortages throughout the globe.

"People think you hit a button and print and a product comes out. But, it's more complicated than that...[and has] a pretty long learning curve."

-JEAN-JACQUES L'HENAFF, LIXIL AMERICAS

Houses for the World

In the realm of construction, today, we also are seeing the remarkable beginnings of 3D-printed buildings. In 2016, for example, architecture firm Gensler saw completion of the world's first 3D-printed office building, or actually buildings: a group of single-story, 2,600-square-foot structures that became the headquarters for the Dubai Future Foundation. Each was fabricated with concrete-producing 3D printers in Shanghai, then shipped to Dubai and assembled. Gensler estimated labor costs were cut by up to 75 percent and overall construction waste by roughly half.

More recently, the Texas-based construction technologies company ICON partnered with housing nonprofit New Story to eventually build scores, or possibly even hundreds, of 3D-printed homes in the developing world, beginning in 2019. As a kind of proof of concept earlier this year, they created the nation's first permitted 3D-printed home in Austin, Texas: a modest 350-square-foot concrete dwelling, completed at a cost of less than \$4,000 and within 48 hours. The printer, manufactured by ICON, was a prototype on which the company believes it's about to improve.

"The prototype worked wonderfully. Now, we have to make it a scalable piece of technology," notes Jason Ballard, ICON's co-founder and CEO. He estimates the second version will be able to print homes of up to about 2,000 square feet. But to succeed in an American market, Ballard says 3D printing with concrete or other basic building materials has to be more aesthetically refined. "The American audience who have seen the first house we printed in Austin, a lot of people love it. We've had thousands of requests," he explains. "But, a certain segment says, 'That is not quite for me yet.'" Indeed, homes need not just walls and a roof, but layers of insulation, wiring, and room for air ducts and windows.

Even so, Ballard argues 3D printing is destined to be more than a niche market. "It's not just for people's backyards or the developing world," he says. "You can build a shack or you can build a mansion. This is a new paradigm."

Scaling up to larger works, Zaha Hadid Architects made a splash very recently with KnitCandela—a thin, sinous concrete shell built on ultra-lightweight, 3D-knitted formwork that was carried to Mexico from Switzerland in a suitcase. Exhibited at the Museo Universitario Arte Contemporáneo (MUAC), in Mexico City, KnitCandela honors the concrete shell structures created by Spanish-Mexican architect and engineer Félix Candela through the use of KnitCrete.

KnitCrete is a custom 3D-knitted, technical textile, the technology for which is being developed at ETH Zurich by the Block Research Group, in collaboration with the Chair for Physical Chemistry of Building Materials, as part of the Swiss National Centre of Competence in Research (NCCR) Digital Fabrication. The formworks are not only easily transportable but they reduce the need for additional support structures and work to simplify logistics at construction sites as well.

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A 3D printer created concrete components for the Gensler-designed offices of the Dubai Future Foundation.



Liquid Assets

Given how 3D printing already has transformed industries, it's easy to forget this is still an emerging technology. In fact, what if someday no one used the term 3D printing and, instead, the 21st century's game-changing invention is really what's known as rapid liquid printing?

"A novelty alone will not sustain itself.
3D printing, like any technology, does have to bear a distinct advantage...you could introduce a product at a lower market volume and, as it achieves higher volume, you could potentially shift to a different form of manufacturing."

-CHARLIE FORSLUND, STEELCASE

Last year at Milan Design Week, a team at the Massachusetts Institute of Technology's Self-Assembly Lab, in partnership with furniture manufacturer Steelcase and product designer Christophe Guberan, unveiled a 3D method that prints inside a large container of gel. Essentially, this new process allows designers to create a greater array of shapes with a sense of fluidity that traditional 3D printing hasn't been able to deliver. Yet, from a practical standpoint, rapid liquid printing also is considerably faster and can more easily print at a large scale. All one needs is a big tank and a lot of gel. That, explains Steelcase's Charlie Forslund, procurement principal-Material Innovation, who oversees material innovation for the company, creates the opportunity for true mass customization.

A 3D method that prints unique shapes inside a large container of gel was unveiled at Milan Design Week in 2017. (Image: Steelcase)



Fit to Print - By Brian Libby

The top of Steelcase's

Bassline table was rapid liquid printed



"A novelty alone will not sustain itself. 3D printing, like any technology, does have to bear a distinct advantage," Forslund says. "The customization or the expression that you can give an object or a product that before wasn't possible: That might be something." He sees different forms of 3D printing, be it rapid liquid printing or other versions of increasing size and speed, as becoming a kind of bridge, "from very low-volume, high-cost ways of making something and the other spectrum that produces units in the tens or hundreds of thousands. 3D printing can be a bridge between those extremes. So, you could introduce a product at a lower market volume and, as it achieves higher volume, you could potentially shift to a different form of manufacturing." Steelcase envisions a future when basic tables, chairs, and other furniture can be customized for each client.

It's not to say that most interior design or architecture firms are using 3D printing every day or using it to produce parts of every finished architectural product. Even at firms like Gensler, which designed the 3D-printed office buildings in Dubai and also gained notice last year for a research product that combined drones and 3D printing, "it's a bit more rare to use 3D printing on the interiors and architecture side," explains Josh Berliner, an architectural and product designer in the firm's San Francisco office. "But, there's a lot of potential in so much of 3D printing. We're starting to get to a point where there will be [the] opportunity to change the way that we build and think about construction techniques a little bit differently. I think that's really exciting." ●

BRIAN LIBBY

is a journalist, photographer, and awardwinning filmmaker. His articles have appeared in The New York Times, The Wall Street Journal, The Atlantic, and Architectural Digest.

Life (and Housing) on Mars



David Bowie famously sang, "Is there life on Mars?" If the red planet is someday colonized by humans, 3D printers may play a crucial role: enabling robots to build dwellings. Through its Space Technology Mission Directorate, the National Aeronautics and Space Administration (NASA) is exploring such possibilities through its Centennial Challenges. As part of that competition, NASA has partnered with Bradley University in its 3D-Printed Habitat Challenge, a multistage process in which teams of college students successfully are creating first digital representations of the physical and functional characteristics of a house on Mars using specialized software tools. The next step, in April 2019, will be to gather at sponsor Caterpillar Inc.'s facility in Illinois (near Bradley) to actually build their designs.

"There have been some interesting questions and possibilities that have come out of it so far," says Lex Akers, PhD, dean of the Caterpillar College of Engineering and Technology at Bradley University. "For instance, how do you build the 3D printer? Do you create just an enlargement of a current 3D printer, or do you use the autonomous feature of a fairly large robot moving around and printing the object? We've seen both. We're building habitats, so we're building a dome. It has to be a material that you can rapidly put down, but also solidify so you can continue to build on top of it. Some people put sacrificial structures inside, and that had to be done autonomously. Some used materials they'd come up with that would allow rapid printing without any internal structure."

Perhaps most exciting, NASA is encouraging student teams to envision actually using the planet's indigenous material, like dirt and rock. "We're at a point where we know what the Mars soil is like, and every ounce you put on a rocket is precious," Akers says. "It only makes sense to make use of what's there, just as humans have always done on Earth."

Whether on our third planet from the sun or on Mars, Akers believes the larger narrative that 3D printing is part of is the automation of the future building industry. "There will be less manual labor and much more innovative programming," he says. "There will be much more need for architects and engineers, and less drudgery of getting paid to carry things around." But, that speed and efficiency will solve problems. "It's been estimated we'll need an additional 30 million homes a year to deal with population growth and also people who don't have homes. Mars isn't the only place where we need to be able to build rapidly."

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The Future-Kitchen

From curious kids to aging boomers, from the green movement to smartphone technology, myriad factors are influencing the design of today's kitchens

While the kitchen long has been the center of the home, it makes sense that it would evolve as lifestyles change. "People are not concerned about their living rooms, they just want a room to live in that centers around the kitchen," proclaims Liz Dickson, owner and principal designer of Millbrook Circle Interior Design in Baltimore.

Designers and manufacturers alike report that transitional and contemporary looks currently reign supreme among consumers, but behind the sleek façade is a kitchen that truly performs for its user, whether that's a 6-year-old making herself a bag of popcorn, a savvy millennial cook who loves to entertain, or an aging boomer with arthritic knees. New technologies, re-imagined layouts, and materials and appliances that contribute to a healthy home and sustainable world also are driving the choices being made in today's kitchen renovation projects.



Design That Matters

The most popular styles of U.S. kitchens are, respectively, farmhouse, transitional, and contemporary designs, according to the 2018 Kitchen & Bath Design Trends Survey by the National Kitchen & Bath Association (NKBA). These three styles topped the list for 73 to 79 percent of those surveyed. In Canada, meanwhile, contemporary-styled kitchens are the most popular, according to 83 percent of surveyed professionals, followed by transitional, and mid-century modern.

This comes as no surprise to cabinet manufacturers like Wood-Mode, Inc. "The overwhelming change we've seen in the last couple years has been the move towards transitional and contemporary styling," says Marianne White, director of dealer development. Specifically, there's interest in clean lines; minimized moldings; and a movement away from the turnings, posts, and carved details that used to be popular. Interest lies in the detail: textured finishes, such as cerusing techniques or sandblasting on wood that highlight the grain, or laminates with tactile effects.

Attention-grabbing finishes also are of importance at SapienStone, which crafts countertops and other hard surfaces from porcelain. Two new finishes are Rovere Baio and Rovere Buckskin, designed to replicate wood surfaces. "When you see and touch these, they have an actual inconsistency in the surface," says James Amendola, director of national sales and marketing for SapienStone. "They have the same look of worn wood, and we use our full-body pigmentation technology, so you can see the wood veining on the edges."

Open floor plans continue to be standard among home designs, with the kitchen flowing between lounging areas, dining areas, and fireplaces. But, White says while homeowners enjoy the great room concept, there's a movement to minimize or conceal the "working parts" of the kitchen when not in use. "In the past, we might have had big, clunky commercial appliances that made a statement," she explains. "But, today, we try to minimize their impact on the design. People are putting integrated panels on appliances so they disappear into cabinetry."

"Our goal is to make the kitchens seamless as a piece of millwork well-integrated into the architecture of the home...major appliances are so well-designed and minimal that they become an asset in the aesthetic of the kitchen overall."

—DAVID NICOLAY, EVOKE INTERNATIONAL DESIGN INC.

The result, adds White: "You end up closing off the utilitarian part of your kitchen, making it look more attractive to the other end of the room where you might have your sofa, fireplace, and big-screen TV."

David Nicolay, co-founder and principal of Evoke International Design Inc. in Vancouver, British Columbia, Canada, agrees that the open-living floor plan of many homes is affecting how the kitchen is designed. "Our goal is to make the kitchens seamless as a piece of millwork well-integrated into the architecture of the home," he notes. And, today, "major appliances are so well-designed and minimal that they become an asset in the aesthetic of the kitchen overall." Sleek induction cooktops and kitchen sinks in solid materials that integrate into the counters are among the ways that the kitchen can become streamlined and more visually compatible with the rest of the home.

On the other end of the spectrum, some manufacturers are still opting to offer statement pieces. "Rather than hiding the refrigerator behind a panel, designers are able to use it as a statement piece," notes Andrew Shead, sales and marketing manager for True Residential, a division of True Manufacturing. One example is the company's new cobalt blue finish, which was recently shown on the True 48 side-by-side refrigerator with glass door.

Dickson also is seeing subtle changes to kitchen design that resonate with how people live, cook, and entertain today. Microwaves have moved from over the range to a wall cabinet, a base cabinet, or even a drawer. The desk area has gone by the wayside, often replaced by a bar area or wine refrigerator, especially for frequent entertainers. Countertops are no longer used to display the latest cool appliance or attractive set of bowls; instead, these items are concealed in cabinets or appliance garages.

Open-living floor plans

call for kitchens that seamlessly blend with the architecture of a home, as evidenced in this space by Evoke International Design. (Image: Janis Nicolay)

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A Kitchen for All

According to NKBA, 30 percent of people embarking on a kitchen renovation project are doing so to update their kitchen to meet their needs as they age and retire. This population, dubbed "living in place," can benefit from modifications like non-glare countertops, touch-free faucets, brighter LED bulbs, safe induction cooktops, and cabinets organized with most-used items in a "nose to knees" position to minimize bending and reaching.

Dickson of Millbrook Circle says plenty of features are available today, from adjustable countertops, cabinets housing stoves and wall ovens at a lower height, and wheelchair-accessible sinks. The best part is—just as what's happening in the bathroom (See "Beauty and Safety for All," p. 54)—designs for those with mobility issues are often undetectable, compared to the utilitarian looks of old.

"As the percentage of the aging population grows, we're missing the boat if we're not designing for that group," notes Adam Gibson of Adam Gibson Design in Carmel, Indiana. Among the considerations designers can make in the kitchen, he adds, are wider doorways for wheelchair and walker access, cabinet pulls that are easy for arthritic fingers, and consolidated lighting controls.

White says Wood-Mode often fields requests from designers seeking modifications specific to their customers. These could range from a toe-kick to accommodate a wheelchair to a microwave drawer positioned at a height a child could access.

"Everybody should be able to use an appliance," notes Shead of True Residential. "Our 30-inch columns and side-by-side refrigerators are built with the components at the top, which means the top shelf is significantly lower than many integrated refrigerators and all the shelves can be reached by far more people without the use of a stool."

With the increase in kids' cooking shows and a desire to include children in meal prep at home, as well as just to give them more independence, making sure the kitchen is safe and accessible for little ones is important, too. At True, its undercounter refrigerator or refrigerator drawer is popular for families with kids, especially to be used as a snack drawer that can be accessed easily. "One of the biggest requests we get is from parents wanting areas to encourage young children to learn to use the kitchen safely," explains Nicolay. "This typically manifests itself in the development of some easy-to-access areas for simple and safe everyday food preparation like cereal and toast. This has become quite standard in all of our designs now."



Wider pathways and

Healthy and Green

"Sustainable materials are considered now more than ever, and I expect that trend to continue with the use of ever-more efficient appliances; heating, ventilating, and air-conditioning (HVAC) equipment; insulation; and lighting," says Gibson. Among the emerging trends in both sustainability and home health he's seeing are dishwashers with no-heat settings, tubular skylights, zero-VOC products, and tankless, on-demand water heaters.

At Wood-Mode, White notes that designers increasingly are considering the impact on health when choosing fixtures and appliances for their projects. "All of our materials, such as what kinds of chemicals and glues we use, are all regulated to make sure we're not putting anything out there that could be harmful to anyone," she explains.

Meanwhile, at SapienStone, both the health aspects and the environmental aspects are addressed with product development and the manufacturing process. Amendola says SapienStone's surfaces are made without resin, and are nonporous, meaning foodborne bacteria will not be absorbed. On an environmental level, the company's plants in Italy and Tennessee recycle all materials, like scraps or imperfect pieces. The factories also recycle their water and have minimal off-gassing and emissions.

Amendola notes another sustainability aspect to SapienStone, stating, "Because we are able to mirror the look and feel of natural stone, we help [to slow the] depletion of natural stone in quarries around the globe."

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Dickson sees plenty of sustainable options in countertops. Among those she likes are surfaces that incorporate recycled glass, as well as a 100 percent recyclable countertop from Durat, which also is made of recycled materials.

Appliances, too, are becoming gentler on the environment. Dishwashers are being developed to use less water and energy, and refrigerators have smaller condensers, which use less coolant. At Dacor, the company has chosen energy-efficient and better-performing materials for many of its refrigerators. Some manufacturers also use an environmentally friendly refrigerant, and have a compressor that runs at variable speeds to reduce energy consumption.

True Manufacturing also takes sustainability seriously. The company builds appliances with the intention they'll last for years. "If our units can last 30 to 40 years, our footprint is greatly lessened," says Shead. In addition, the refrigerators are designed to be significantly energy efficient; the company uses recycled composite materials, as well as eco-friendly insulation; and it has greatly reduced the use of hazardous materials like lead, mercury, and cadmium.

At the construction level, environmental responsibility is just as important. Dickson notes that, in the past, demolished cabinets headed straight to a dumpster; now, however, most contractors will carefully remove the cabinetry and donate it to organizations that can resell or donate it.



The Future Is Now

The promise of smart appliances has long been dangled before consumers, and it's an idea whose time has finally come. Countertop appliances, lighting, and heating can be controlled with apps, and sinks and trash cans can be operated with a gesture. Some of the most recent high-tech additions to the kitchen include wall-mounted flat screens, docking stations, lighting-control keypads, and voice-enabled automation devices, according to the design trends report from NKBA. The study also shows that Gen-Xers (now aged 37 to 52) are most likely to add technology into their kitchen designs.

What's disappearing is the so-called "command center" in the kitchen, a desk where a computer might reside for household tasks like bill paying and emailing. With the advent of wireless technology, a wired space for a desktop computer is fast becoming obsolete as homeowners now are free to move around with their tablets or laptop computers. Instead, Dickson often is asked for USB ports in kitchen islands or at outlets for charging.

"Over the past few years, we have made huge strides in product development and technology," says Scott Kim, director of products and R&D for Dacor. "Many of our cooking and refrigeration products are Wi-Fi-enabled, with touchscreens, hidden controls, and remote view cameras." He thinks the industry will continue to see kitchen products being developed that seamlessly integrate automation and other smart technologies into daily routines.

The increasing prevalence of LED lighting also opens new realms for kitchen design. At Wood-Mode, a new cabinet program fully integrates LED lighting into the design of the cabinet, so the lighting and wiring is united seamlessly into the cabinet installation. The company works in partnership with Häfele America Co. to design such applications as task lighting, in-cabinet lighting, downlighting, and in-drawer lighting. Every lighting configuration serves a specific function and can be programmed to different combinations depending on the time of day or task at hand.

Notes Jeff Wolfe, director of marketing for Wood-Mode, "LED technology, as a low-heat, low-energy source, has really opened the door to put lighting into small spaces—look at what's going on in cars, with LED trim on the interiors."

Another advantage of LED is the longevity of the bulb. Dickson explains this makes it easier to have lighting in vaulted ceilings or other hard-to-reach places, since it might be decades before the bulb needs replacing.

Induction cooking continues to be of interest in future-forward kitchens, although gas is still the most popular cooktop. SapienStone has taken induction technology to the next level, integrating an induction cooktop right into the porcelain surface.

Advances in cooking are coming from Bertazzoni as well. The company says its new MonoBloc 19,000 BTU brass burner has the fastest time-to-boil on the market, while other advances include new user interface gauges with an embedded cooking mode display and a food probe; a temperature gauge that monitors pre-heat cycles and cooking temperature progression; and a convection speed oven that combines convection baking, an electric grill, and a microwave.

What does the future hold for kitchen technology? NKBA's 2018 Kitchen Technology Awareness and Usage Report sees opportunities in cooking appliances that can automatically cook food or turn off if left on accidentally, as well as hands-free functions, lighting with preset modes, and built-in docking stations with integrated charging.

But, there are barriers to overcome first: According to the study, consumers' main deterrents to incorporating more technology—such as smart features—into their kitchens include an assumption the cost will be too high, fears about privacy or security issues, and the concern that the technology will break and require repair.









- 1. Options like this cobalt-blue refrigerator from True Residential can serve as statement pieces.
 (Image: True Manufacturing)
- 2. Millbrook Circle pairs fresh, functional design with comfort and understated luxury. (Image: Millbrook Circle)
- 3. SapienStone's porcelain surfaces mimic natural stone and slow the depletion of quarries. Shown here is the company's Bright Onyx. (Image: SapienStone)
- **4.** Contemporary styling and ease-of-use are evident in this deep-recessed cabinetry from Wood-Mode. (Image: Wood-Mode)

The Human Touch

Even with all the futuristic technology being integrated into kitchens, consumers still crave a personalized, hand-created experience.

One of Wood-Mode's most important messages is how the cabinets the company makes are handled thousands of times by the company's staff, including hand-applied finishes, hand distressing, and custom requests. Wood knobs, for example, might be hand-turned by a local Amish family.

At Dacor, the human touch also is important. For instance, some collections feature knurled knobs, while the Atelier Edition refrigerator and freezer collection offers hand-painted porcelain interior panels. "Dacor pays attention to the details...and transforms our products into works of art," says Kim.

Whether a kitchen is teeming with handcrafted touches, or futuristically modern, one thing is true: Designers have a spectrum of resources at their fingertips to design a kitchen that truly reflects its user and can be enjoyed by all. ●

JESSICA GOLDBOGEN HARLAN

is the author of eight cookbooks, including Ramen to the Rescue, Mason Jar Lunches, and The 5-Ingredient Vegetarian Pressure Cooker Cookbook. She has written for various publications and websites, including HFN, Town & Country, and Yahoo!, and served as the Cooking Equipment Expert for About.com. A graduate of the Institute of Culinary Education, she also teaches private and group cooking lessons for adults and children.



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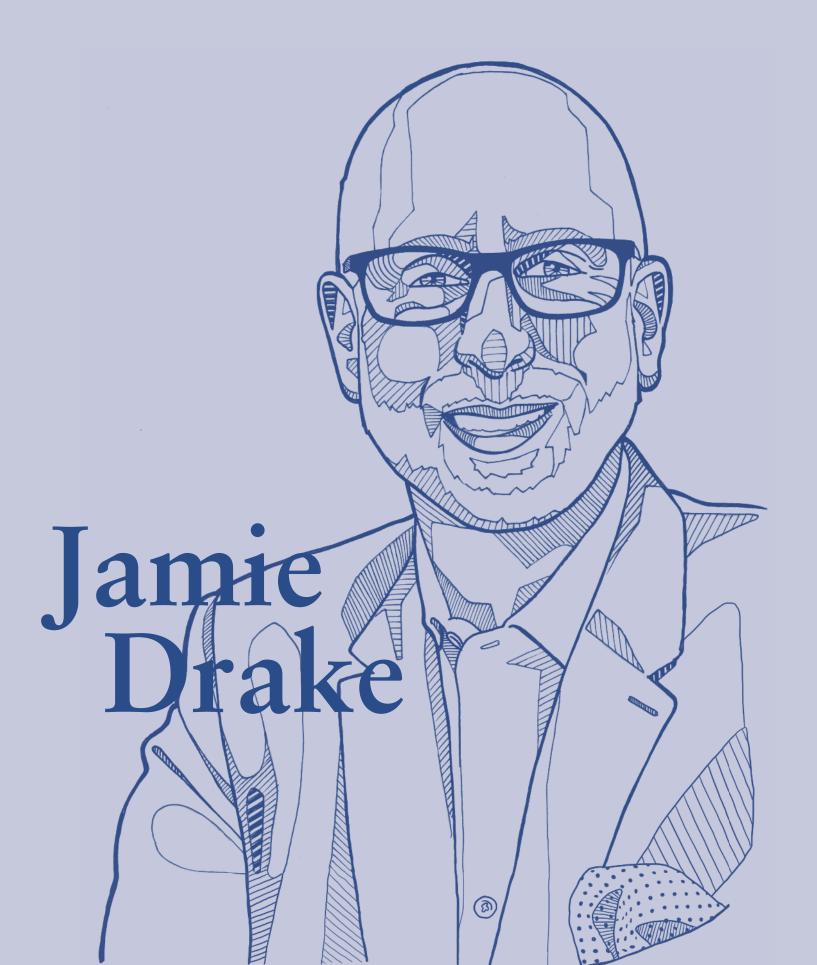
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NO WAX, NO BUFF





As one of the distinctive names in the world of design for four decades, Jamie Drake has built a reputation—rapidly becoming a legacy—of creating spaces that are defined by color, glamour, wit, and comfort. His knowledge of antiques and how to employ them, married with cutting-edge design, is a hallmark of the Drake oeuvre, illuminated in his book, New American Glamour. A graduate of New York's Parsons School of Design, he is now on the school's board.

Drake launched his own firm, Drake Design Associates, in 1978 in Manhattan. In 2015, the designer merged his firm with that of his former protege, Caleb Anderson, to form Drake/Anderson. The firm boasts a client list that includes, among others, such Hollywood and Manhattan bold-faced names as Madonna and former New York mayor and media baron Michael Bloomberg. As an example of his range, Drake completed a major renovation of Gracie Mansion, the official residence of the Mayor of the City of New York, and also designed a medical facility in Florida.

A licensed designer for multiple companies, including global manufacturers of top-flight carpets, furniture, and fabrics, Drake is the recipient of many honors in the profession, including a Partnership for the Homeless Director's Award for his dedication to philanthropy and hands-on work for the less fortunate. A force in the New York Metro chapter of ASID, he has received the organization's Presidential Citation and Platinum Award and was inducted into the ASID College of Fellows. Drake currently serves as the Chair of The Alpha Workshops, where he has been a board member for many years.

A native of small town New England (specifically, Woodbridge, Connecticut), Drake has been a resident of New York City since his college days.

i+D: They say that just by living in New York, you get smarter every day.

Drake: I don't know if I'm smarter. But, I definitely learn something every day. I moved to New York after graduating from high school to go to Parsons. New York is the place I wanted to go to, and when I was accepted at Parsons, I stopped applying to other schools.

i+D: What are you reading these days? Drake: I read *The New York Times* [and] the *New York Post* every day. In print.

i+D: Starting your day going high and low. Drake: Let's say I get two different perspectives.
And, I have to admit, because of distractions, because our lives are delivered to us in our palms, I often don't finish the papers on the day they're published. But, I save them and do read them.

i+D: How long do you take after you wake up before looking at that palm-sized tyrant?

Drake: Ninety seconds. I know. We're tethered to them, aren't we?

i+D: Are there still regional styles of design, for example New England, California, or the Southwest?

Drake: There are regional sensibilities. But, there's nothing truly limited to a place. One is always affected by the quality of light. Fabric, textiles, and colors do respond to their region.

i+D: You wouldn't use pastels in New England? Drake: Maybe. And, in Miami, I don't use a lot of velvet.

i+D: What's the difference between designing a medical facility and Gracie Mansion?

Drake: Program comes first and foremost. For example, understanding how the patients are going to use it, how to improve on that, how to enrich the user in both instances. The common threads are the eye I bring to the projects: a sense of delight and wonder, balance and scale.

i+D: What was the first thing you designed or built?

Drake: A fort with my best friend, Larry, from around the corner in Woodbridge. We were seven. It was a pit in the ground surrounded by boulders from stonewalls that were in our town. I was in charge of decorating and raided an abandoned barn down the other side of a hill through the forest. The barn had rusted-out washbasins and broken glass bottles. I called them the "antiques."

i+D: Who is the client from hell?

Drake: The one who refuses to have faith in you. Who questions everything, from the size of the bottom portion of a crown molding that is 14 feet off the ground, whether it should be three-eighths of an inch or one-quarter. And, wants to see mockup after mockup. Who questions every cord on every throw pillow. You wonder why they hired a designer and just didn't do it themselves.

i+D: What's wrong with design today?

Drake: First response: There's nothing wrong. Second response: There are too many people who are influenced by "influencers" and trends, rather than finding something within themselves.

i+D: Have you experienced the revolution in 3D printing?

Drake: Yes. We've used it in designing hardware, faucets, and doorknobs on projects. I marvel at it.

i+D: What's your sport?

Drake: Tugging on my e-cigarette. Oh, okay. Working out with a trainer three times a week.

i+D: What elates you?

Drake: Creativity. Seeing something I've never seen before.

i+D: What frightens you?

Drake: Big waves, fast horses, motorcycles. And, the political climate of the world.

i+D: Some designers have sent notices to their customers saying that, with the Trump administration-imposed tariffs, they won't be able to absorb extra costs, and prices will rise. Have you experienced that?

Drake: We haven't yet, but I expect we'll see cost increases due to tariffs. I have a licensed line of furniture whose owners are Chinese and the product is manufactured in Vietnam. It's sold globally, with a huge proportion in China, so I assume that will be affected.

i+D: Not a good scenario.

Drake: We live in global times and we all must prosper as a globe. The tariffs are a disaster.

i+D: What do you disregard when you look at someone's résumé?

Drake: I don't disregard anything. I look at every word, every comma, and every single punctuation mark. The address. Everything.

i+D: What was your first job?

Drake: At Macy's, when I was 16. I worked in the housewares department, in sales. But they ended up letting me do displays. I showed a flair for that.

i+D: Lessons learned?

Drake: Put your heart into it and you'll do well.

i+D: For years, you ran your firm yourself. Then, three years ago, you brought in Caleb Anderson as a partner. Why share a leadership role?

Drake: We were very busy and getting busier and I wanted to think about how we could continue to grow, service our existing clients, and maybe do it in a way that was less stressful on me. To allow me to work with a sense of [a] more relaxed freedom and share the pleasures and the talent.

i+D: What personality trait do you want to change?

Drake: My impatience.

i+D: How's that working out?

Drake: I struggle. ●

AMBROSE CLANCY

is the editor of the Shelter Island Reporter and a novelist, nonfiction author, and journalist. His work has appeared in GQ, The Washington Post, and Los Angeles Times.

Beauty a Safety

The benefits of universal design in today's bathrooms means *all* users can enjoy the ultimate in form and function

Statistics show that bathrooms can be the most dangerous room in a house. Each year, according to the Centers for Disease Control and Prevention (CDC), approximately one-quarter million people over the age of 15 visit emergency rooms because of injuries suffered in the bathroom, and about 14 percent of them are hospitalized. In addition, the National Institute on Aging (NIA) notes, "More than a third of adults over 65 slip and fall each year, with 80 percent of those falls occurring in the bathroom."

The good news is manufacturers and designers alike are training their eyes onto new technologies to create bathroom products that meet both the highest standards of the Americans with Disabilities Act (ADA) and the most rigorous stylistic ones as well. Here, specialists in the field weigh in on creating baths that are beautiful, safe, and functional for all.



Interior Designers' Viewpoints

Diane Foreman, a designer at Neil Kelly Company, in Seattle, says, "When working with clients with disabilities, the most important gift a designer can offer is the combination of beauty with function tailored to their needs. First and foremost, you need to aim for maximum safety, maneuverability, and comfort, and that begins with an ADA-compliant layout."

Foreman cites some of her must-haves: no-threshold showers with built-in or pull-down benches; comfort-height water closets with grab bars; hand-held, height-adjustable showerheads; non-slip surfaces; storage within a wheelchair user's reach; and contrasting surfaces, i.e., a countertop edge in a different color than the cabinets below, helpful for those with diminishing eyesight.

Especially important are non-slip/easy-care surfaces. Foreman is keen about "large-format, terrazzo-look tile, encaustic tile, wood-look porcelain tiles, and linoleum in great patterns and textures."

Known for award-winning interiors, including in the category of universal design, Foreman enthuses over today's "functional art," saying, "There is so much available. Beautiful lever-handle faucets. Grab bars that coordinate with faucet collections. Voice-activated showers and lighting." And, what's driving bathroom design these days? "The at-home spa look and function, hands down," she explains. Plus, "more and more clients are opting for the at-home spa luxury shower over a tub."

Addressing some other ADA-related issues is Beverley Binns, director of design at Toronto's family-owned Binns kitchen + bath design. "All designs should be universal," Binns says. "It's good for everyone. And, while today some clients might not need such items as grab bars, we like to help them plan for the future. In this case, by installing a support system in the wall that can be utilized when the time does come."

design to meet a client's goals and expectations, as in this master bath that also addresses functional requirements.
(Image: Neil Kelly Company)

"When working with clients with disabilities, the most important gift a designer can offer is the combination of beauty with function tailored to their needs."

-DIANE FOREMAN, NEIL KELLY COMPANY

Binns, whose work also has nabbed design awards, is most enthusiastic that homes are becoming ever more automated with touch controls. "Basically, after you set such things as water temperature and shower type, it's merely a question of turning the system on and off with the touch of a button." This means, even the elderly for whom technology isn't intuitive are comfortable with it.

"As kitchen and bath specialists," adds Binns, "we've always looked for non-slip flooring. Today, with the line between home and commercial design blurring, many styles are moving from commercial to residential spaces, with different finishes and a variety of materials."

Asked if tubs are "dead," Binns replies, "No, not at all. But, too often they are more of a sculptural presence than functional. We always make sure to have an ample bathtub deck that helps with getting in and out."

Binns expands on Foreman's mention of the importance of color contrast. "There's a lot going on with all the fixtures," she says, "so you want a subtle backdrop, with say, floors darker than walls and objects like the ADA-required shower bench providing contrast between vertical and horizontal lines. These things create spatial points of reference, basic wayfinding cues that help people maneuver."

As to what is driving design these days? Binns explains it's the wet room concept, with shower, tub, and water closet together in one open shared space.

The team at Neil Kelly Company

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Living by Design Bathrooms

The M-Series thermostatic module from GRAFF allows a user to create, customize, and transform their shower experience. (Image: GRAFF)

What's in the News

"Each GRAFF product is made with accessibility for all ages in mind," says Céline Marcotte, business development manager for the kitchen and bath products manufacturer. "We abide by ADA rules, and keep up-to-date to best inform our product design. ADA is key to our value system."

Plus, offering a wide range of contemporary, transitional, and traditional styling, as well as an extensive number of finishes—polished chrome, brushed and polished nickel, olive bronze, 18K and 24K gold, brushed gold, and unfinished brass—the company supports today's aesthetic concepts.

One example Marcotte provides is the ADA-compliant grab bar, which comes in four sizes and seven designs to complement each of GRAFF's signature collections. "Pair the grab bars with a sliding hand-shower holder for even more functionality in the shower without losing the design," she adds.

Technology enables a long list of features to be incorporated into a variety of GRAFF products. One of the most popular is the Aqua-Sense shower collection that "combines water, light, and sound to create a harmonic balance and allows for a deeper sense of wellness. From watching videos to enjoying color therapy, it's a multimedia experience via a touchpad."

"You want a subtle backdrop, with say, floors darker than walls and objects like the ADA-required shower bench providing contrast between vertical and horizontal lines. These things create spatial points of reference, basic wayfinding cues that help people maneuver."

-BEVERLEY BINNS, BINNS KITCHEN + BATH DESIGN



Things Are Changing Fast

"Since the early 2000s," says Ryan Ramaker, senior director of marketing, product management, and product development at Hansgrohe North America, "many plumbing manufacturers have been incorporating great styling into products that also meet ADA guidelines. "Today," he adds, "nearly all of our faucet collections contain either a lever handle or our new Select technology, allowing us to deliver a really comprehensive assortment of [universal design]-oriented products."

About Select, he explains, "Developed for bathroom faucets, Select-integrated products incorporate an ergonomically placed pushbutton, which makes it easy to operate the faucet with wrist, elbow, or knuckles."

Because "user experience is a key factor in the design process," Ramaker says, "in both our headquarters in Germany and in the United States, we invite consumers, professional customers, and guests to experience our products. Here in Georgia, our Aquademie training and display facility is a dynamic resource for consumers and design professionals to utilize and explore a world of bathroom and kitchen products, and ADA-accessible spaces."

Whether one views the product aesthetically or in terms of ease and functionality, "a positive experience is vital," Ramaker insists.



Living by Design Bathrooms

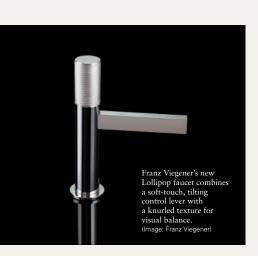
Artistic faucets from Gi-Design/Menea Group are titanium and stainless Water Sculptures inspired by the forms of nature, in this case of a boa. (Image: Menea Group)



"Faucet designs that were ADA-compliant used to be plain and, frankly, dull," says John Weinstein, director, North America of Franz Viegener. Not anymore, he assures. "Beginning with the basics for a coordinated look, each collection consists of matching faucets, shower systems, deck and wall-mounted fixtures, floor-mounted tub fillers, and accessories."

As to the process, he states, "Our design team considers bringing a beautiful design element into a useful product, addressing both the needs of the disabled and elderly, while maintaining the aesthetics desired. If we can meet both challenges, then it's a win-win."

Launched this year, the company's Lollipop single-hole faucet uses the latest technology in its tilting control lever that requires only the softest touch to turn it on, giving it ADA approval, while its unobtrusive design complements the faucet's aesthetic, and the knurled texture provides visual balance. "We aim to find new ways to visualize a faucet...proving that ADA compliancy doesn't mean 'ordinary,'" Weinstein explains. Pointing out that Lollipop and the equally universally designed Nerea faucets are available in many finishes, including polished and rose gold, he adds, "They not only function well, but are pieces of art, perfect for any high-end, contemporary bath."







Art or...

Among the most imaginative faucets—they were exhibited at Milan's Triennale Design Museum in 2016—are those from Gi-Design in Italy's Piedmont region. The current models of the Water Sculptures, as they're called, bring to mind loose drawings of a horse, snake, boa, and eagle.

Made of titanium—steel also is offered—"the Sculptures are fully customizable," says Matteo Enea, chief executive, Menea Group, the company's U.S. representative. "From the materials to the various kinds of knobs to the shape, our team has experience in several architecture and design fields, so they're able to create objects that interpret innovative visions with practicality and comfort."

Activated by an innovative technological system, the Sculptures can be remotely controlled via touch, Wi-Fi, and voice. A disc or wireless steel cylinder activates the water. A beam of multicolored LED lights appears as the water flows. A client's preferred temperature and water level is regulated by the simple pressing of a button. It's easy to operate for all kinds of clients, and just one more way a beautifully designed bath can be truly accessible to all.

MICHELE KEITH

is a New York-based writer whose work has appeared in The New York Times, ASPIRE Design and Home, Luxury Listings NYC, and DESIGN, among other magazines. She also has written two coffee table books for The Monacelli Press: Designers Here and There and Designers Abroad.



Living by Design Bathrooms

Concrete Luxury



Once viewed primarily as the go-to ingredient for an industrial residential look, concrete has undergone a transformation. Thanks to those who dare to dream, as well as new technologies, concrete is now all that it wasn't even a mere 10 years ago.

"We make every pour in small batches by hand," says Kate Balsis, co-partner of California-based Concrete Collaborative with sisters Hailey Weller and Sally Smithwick; Hailey's husband, Ryan; and her own husband, Chad. "It's this process that drives the high-end look and feel, and authenticity."

"Turning concrete into something so fashionforward has been a goal from the beginning," explains Balsis. "Currently, clients are loving graphic and modern patterns like our strands collection by Sarah Sherman Samuel. Crisp, less classical, more architectural. For the popular contemporary spa feeling, the venice terrazzo collection is delivering the desired luxurious look."

Of equal importance, she says, the company "stays abreast of ADA regulations, new slip-resistance testing, and local codes. All factor into what we sell and how we sell it commercially. Functionality has to be in the forefront, integrated into the product while maintaining design integrity."

"We slip-test everything for flooring, interior and exterior, wet areas, etc. And, we have various textures to meet different ADA requirements. We even developed an extra-rough custom finish for our pavers used at such retirement communities as Fountainview in Playa Vista, California.

Another trailblazer of the concrete world is Staj Olson, founder of Igneous Bath in Montana. He debuted in 2016 with the Airah and Banskah thin-walled, heated-concrete soaking tubs. Taking technology in the bath to new heights, the tubs feature Wi-Fi-Nest-compatible thermostats, as well as a full-color, touchscreen interface that can be controlled from near or far and retain the desired water temperature.

The tubs' silhouettes are sleek and contemporary, yet "warm." Quite magically, each tub becomes a "temporary art display," with tiny patterns of micro cracks and slight changes in the cement's color becoming visible when filled. It all vanishes when the tub is drained.

Olson uses finishes that are durable and repairable. He replaces the noise of jets and recirculation pumps with silent, penetrating heat. The proprietary cement used is very dense, making the tubs extremely resonate. This is ideal for the optional sound upgrade that turns the tubs into a Bluetooth speaker that receives a signal from a smartphone or other device. The selected media can fill the entire bathroom or be audible only inside the tub or under the water.

Personally sculpting each mold, Olson offers everything customized. "These tubs are a personal investment," he says. "I want to give each individual exactly what they desire."



Concrete Collaborative crafts a variety of unique and sustainable concrete products for innovative uses in interiors and exteriors. (Image: Concrete Collaborative)

Showroom Special Advertising Section

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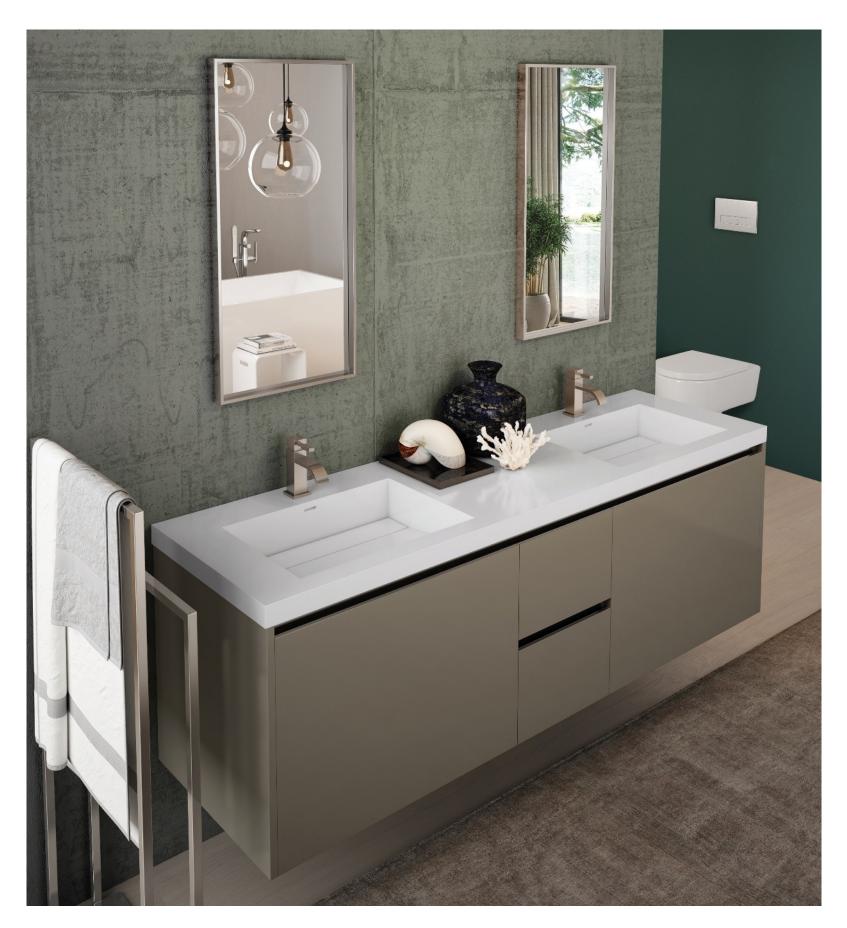
SUSTAINABLE FUTURES

Attracting young creative minds to the field of design is an ongoing pursuit for schools and professional firms alike. A design education, however, doesn't begin with the decision to earn a degree in a design discipline but rather starts much earlier, when young fertile minds are open to new ideas and explorations in creativity. In the January/February issue, i+D will investigate the ways in which today's youth are learning about and engaging with interior design and architecture, how companies like The LEGO Group are helping to guide awareness of positive building practices, and how the current design community can get involved in the future of the profession. lacksquare

LEGO is rolling out botanical elements, such as leaves, bushes, and trees made from plant-based plastic sourced from sugarcane. (Image: The LEGO Group)







LINEA towel stand

 $\mathsf{KUBISTA} \mid \mathsf{vanity} \; \mathsf{in} \; \mathsf{matte} \; \mathsf{taupe} \mid \mathsf{sink} \mid \mathsf{faucets}$ NAVI wall-mount mirror

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